A Mosquito Taxonomic Glossary
XIV. The Larval Body (except chaetotaxy)*

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For a full explanation of this project see Part I (Knight 1970). As before, terms recommended for standardized use are given fully capitalized; synonyms or terms used in error are in lower case and underlined; standardized abbreviations are suggested; and an appendix presenting supplementary information is included. Newly added in this part are references to the figure(s) in which each defined anatomical structure is illustrated. It should be noted that in this as in the four previous parts, terms first (or only) used in languages other than English are listed in the glossary under their English counterpart followed by the foreign term in parentheses.

Readers are reminded that this is a preliminary presentation and that when all parts are completed, they will be thoroughly revised and issued under a single cover. Because of this, all individuals interested in mosquito systematics and morphology are encouraged to comment fully on any portion of the included text with which they take exception. It should again be emphasized that references to the first use of a term are those which we are aware of at this time. If the reader is aware of an earlier use of a particular term, we would appreciate hearing about it.

Part XIII of this series dealt with the larval pharynx (Harbach and Knight 1977).

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ABDOMEN (Ab). -- See Part V (Knight and Laffoon 1971a, 8).

abdominal plate. -- See TERGAL PLATE.

ABDOMINAL SEGMENT (I,II, etc.). -- See Part V (Knight and Laffoon 1971a, 8).

ABDOMINAL SEGMENT VIII (VIII) (Figs. 77b, 78c, 79c, 80c). -- In culicid and most other nematocerous larvae, the larval eighth abdominal segment bearing the siphon and/or spiracular apparatus dorsally; structurally comprising the fused embryonic eighth and ninth abdominal segments.

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ABDOMINAL SEGMENT X (X) (Figs. 77b, 78c, 79c, 80c). -- See Part VII (Knight 1971,42). In culicid and most other nematocerous larvae, the ultimate or apparent ninth abdominal segment; largely comprising the embryonic tenth abdominal segment but perhaps including parts of the true ninth and eleventh segments and the telson. (Syn.: hump (Höcker), Haller 1878, 93; tracheal gill bearing hump (Tracheenkiemen tragenden Höcker), Haller 1878, 94; tracheal gill hump (Tracheenkiemenhöcker), Haller 1878, 101; anal segment (Analleddet), Meinert 1886, 377; ninth segment, Howard 1900, 25; last segment, Smith 1902a, 272; ninth abdominal segment, Johannsen 1903, 414; last abdominal segment, Patton and Cragg 1913, in a chaoborid, 192 and Gutsevich *et al.* 1974, 36; anal lobe, Christophers 1922, 541; tail segment (Schwanzsegment), Stadtmann-Averfeld 1923, 114; terminal segment (Endsegment), Martini 1931, 84; 10th segment, Puri 1931, 39.)

accessory plates. -- See MEDIAN ACCESSORY TERGAL PLATE and SUBMEDIAN ACCESSORY TERGAL PLATE.

accessory supporting organ. -- See NUTTALL AND SHIPLEY'S ORGAN.

ACCESSORY TERGAL PLATE (ATP) (Fig. 77a,b). -- In some anopheline larvae (Belkin 1962, defined, 560), one of the small median or submedian dorsal sclerites located posterior to the tergal plates of abdominal segments I-VII. See MEDIAN ACCESSORY TERGAL PLATE and SUBMEDIAN ACCESSORY TERGAL PLATE.

acus. -- See SADDLE ACUS and SIPHON ACUS.

acus of siphon. -- See SIPHON ACUS.

air opening. -- See SPIRACULAR OPENING.

air siphon. -- See SIPHON.

air tube. -- See SIPHON.

air-tube (Aanderør). -- See SIPHON.

anal appendages. -- See ANAL PIPILLA.

anal fan. -- See VENTRAL BRUSH.

anal fin. -- See VENTRAL BRUSH.

anal fingers. -- See ANAL PAPILLA.

anal flaps. -- See ANAL PAPILLA.

anal gills. -- See ANAL PAPILLA.

anal lobe. -- See ABDOMINAL SEGMENT X.

anal lobes. -- See ANAL PAPILLA.

ANAL PAPILLA (APP) (Figs. 77b, 78c, 79c, 80c). -- In culicid (Analpapillerne, Meinert 1886, 337) and other dipterous larvae, one of usually four soft elongated processes borne posteriorly around the anus of abdominal segment X; presumably representing the modified cerci of the embryonic eleventh abdominal segment. (Syn. for culicid larvae: tracheal gills (Tracheenkiemen), Haller 1878, 93; gill filaments (Kiemenblätchen),

Raschke 1887, 12; gills, Hurst 1890a, 50; flaps, Howard 1896, 13; gill flaps, Howard 1896, 13; terminal flaps, Howard 1896, 13; anal tubercles, Giles 1900, 40; anal processes, Dyar 1901a, 179; anal fingers, Dyar 1901b, 181; anal flaps, Howard 1901, 151; anal plates, Theobald 1901, 27; processes, Theobald 1901, 27; caudal fins, Theobald 1901, 31; papillae, Theobald 1901, 33; anal gills, Smith 1902b, 303; blood gills, Johannsen 1903, 397 and Gutsevich *et al.* 1974, 37; anal appendages, Johannsen 1903, 405; anal tracheal gills, Smith 1904, 21; anal lobes, Snodgrass 1959, 27.) See appendix.

ANAL PAPILLA-SADDLE INDEX. -- In culicid larvae, the length of the dorsal anal papillae divided by the saddle length. (Syn.: gill-saddle index, Marshall 1938, 52; gill saddle index, Woodhill and Pasfield 1941, 203.) See SADDLE LENGTH.

anal plates. -- See ANAL PAPILLA.

anal processes. -- See ANAL PAPILLA.

anal saddle. -- See SADDLE.

anal segment (Analleddet). -- See ABDOMINAL SEGMENT X.

anal setae (Analbørster). -- See DORSAL BRUSH.

anal siphon. -- See SIPHON.

anal tracheal gills. -- See ANAL PAPILLA.

anal tube. -- See SIPHON.

anal tubercles. -- See ANAL PAPILLA.

anal tuft. -- See VENTRAL BRUSH.

anchoring bristles. -- See DORSAL BRUSH.

anterior flap. -- See ANTERIOR SPIRACULAR LOBE.

anterior lateral valves (vorderen seitlichen Klappen). -- See ANTEROLATERAL SPIRACULAR LOBE.

anterior lobe (vordere Lappen). -- See ANTERIOR SPIRACULAR LOBE.

anterior median dorsal valve. -- See ANTERIOR SPIRACULAR LOBE.

ANTERIOR MEDIAN PROCESS (AMPc) (Fig. 77c). -- In anopheline larvae, an elevated dome- or knoblike membranous area situated posteriorly on the midline of the anterior spiracular lobe of the spiracular apparatus; in some species, produced into an elongate process, e.g., in *Chagasia* species. (Syn.: transparent knob, Reid 1968, 37; domed area, Reid 1968, 38; knob, Reid 1968, 38; stigmal process, Reid 1968, 38; stigmal filament, Reid 1968, 38; stigmal club, Reid 1968, 38; filamentous appendage, Komp 1942, 18; filamentous projection, Komp 1942, 85.) See appendix.

anterior middle valve (vordere mittlere Klappe). -- See ANTERIOR SPIRACULAR LOBE.

anterior pad. -- See ANTERIOR SPIRACULAR LOBE.

anterior perispiracular lobe. -- See ANTERIOR SPIRACULAR LOBE.

anterior piece. -- See ANTERIOR SPIRACULAR LOBE.

anterior plate. -- See ANTERIOR SPIRACULAR LOBE PLATE I.

ANTERIOR SPIRACULAR LOBE (ASL) (Figs. 77c,d, 78b, 79b, 81a,b). -- In culicid larvae, the anterior, unpaired flaplike projection of the spiracular apparatus; bearing setae 3 (alveolus only), 4 and 5-S on its inner lateral margins; partly homologous with the "saw" of Mansoniini larvae. (Syn.: fan-shaped piece, Nuttall and Shipley 1901, 65; fan-shaped flap, Nuttall and Shipley 1901, 65; fan-shaped plate, Nuttall and Shipley 1901, 65; median anterior fan-shaped plate, Nuttall and Shipley 1901, 65; anterior piece, Howard *et al.* 1912, 92; transverse movable pad, Christophers 1922, 538; anterior middle valve (vordere mittlere Klappe), Martini 1923, 530; anterior valve (vordere Klappe), Montschadsky 1927, 486; anterior lobe (vordere Lappen), Montschadsky 1927, 495; anterior pad, Puri 1931, 38; medio-dorsal valve, Marshall 1938, 48; anterior flap, Komp 1942, 18; small flap valves (petit clapets), Sautet and Audibert 1946, in part, 46; small median flap valve (petit clapet médian), Sautet and Audibert 1946, 46; central flap valve (clapet central), Sautet and Audibert 1946, 47; median valve, Hopkins 1952, 16; anterior perispiracular lobe, Christophers 1960, 218; median dorsal valve, Belkin 1962, defined, 561; median dorsal lobe, Belkin 1962, defined, 561; anterior spiracular valve, Knight and Laffoon 1971b, 168; anterior valve, Gutsevich *et al.* 1974, 35; anterior median dorsal valve, Harrison and Scanlon 1975, 20.) Meinert (1886, 394) first referred to the anterior spiracular lobe as a "fold of skin." See appendix entry SPIRACULAR LOBE.

ANTERIOR SPIRACULAR LOBE PLATE I (ASLP') (Figs. 77c,d, 78b, 79b, 81a,b). -- In culicid larvae, the inner sclerite (that nearest the spiracular openings) of the anterior spiracular lobe of the spiracular apparatus. (Syn.: movable transverse plate, Imms 1908, 107; fan-like plate, Imms 1908, 130; transverse plate, Howard *et al.* 1912, 92; fan-shaped plate, Christophers 1922, 538; tergal plate, Patton and Evans 1929, 241; pre-spiracular plate, Evans 1938, 21; prespiracular plate, Evans 1938, 30; inner flap of medio-dorsal valve, Marshall 1938, 49; anterior plate, Komp 1942, 18). See appendix entries ANTERIOR SPIRACULAR LOBE PLATE I and SPIRACULAR LOBE.

ANTERIOR SPIRACULAR LOBE PLATE II (ASLP") (Figs. 77c, 78b, 81a,b). -- In culicid larvae, the somewhat weakly developed outer sclerite (that nearest the distal margin of the siphon) of the anterior spiracular lobe of the spiracular apparatus. (Syn.: outer flap of medio-dorsal valve, Marshall 1938, 49; outer plate of anterior [perispiracular] lobe, Christophers 1960, 221.) See appendix entry SPIRACULAR LOBE.

anterior spiracular valve. -- See ANTERIOR SPIRACULAR LOBE.

anterior tergal plate. -- See SADDLE.

anterior valve. -- See ANTERIOR SPIRACULAR LOBE.

anterior valves. -- See dorsal valves.

anterior valve (vordere Klappe). -- See ANTERIOR SPIRACULAR LOBE.

ANTEROLATERAL SPIRACULAR LOBE (LSL) (Figs. 77c,d, 78b, 79b, 81a,b). -- In culicid larvae, one of the more anterior (smaller pair) of 2 bilateral pairs of flaplike projections of the spiracular apparatus; weakly developed (indistinct) in larvae of the tribe Mansoniini. (Syn.: triangular flaps, Nuttall and Shipley 1901, 65; conical papilla, Johannsen 1903, 409; lateral flaps, Howard *et al.* 1912, 92; lateral papilla, Christophers 1922, 538; anterior lateral valves (vorderen seitlichen Klappen), Martini 1923, 530; middle lobes (mittleren Lappen), Montschadsky 1927, 486; lateral valve (seitliche Klappe), Montschadsky 1927, 486; lateral lobe (seitliche Lappen), Montschadsky 1927, 495; flap, Evans 1938, 30; latero-dorsal valves, Marshall 1938, 48; small flap valves (petit clapets), Sautet and Audibert 1946, in part, 46; small lateral flap valves (petit clapets latéraux), Sautet and Audibert 1946, 46; lateral flap valves (clapets latéraux), Sautet and Audibert 1946, 46; lateral perispiracular lobe, Christophers 1960, 218; dorsolateral valve, Belkin 1962, defined, 561; dorsolateral lobe, Belkin 1962, defined, 561; lateral spiracular valve, Knight and Laffoon 1971b, 168.) See appendix entry SPIRACULAR LOBE.

ANTEROLATERAL SPIRACULAR LOBE PLATE I (LSLP') (Figs. 77c, 78b, 79b, 81a,b). -- In culicid larvae, the inner sclerite (that nearest the spiracular openings) of one of the anterolateral spiracular lobes of the spiracular apparatus. (Syn.: inner flap of latero-dorsal valve, Marshall 1938, 49; inner plates of lateral perispiracular lobes, Christophers 1960, 218; supporting plate, Gutsevich *et al.* 1974, 34.) See appendix entry SPIRACULAR LOBE.

ANTEROLATERAL SPIRACULAR LOBE PLATE II (LSLP") (Figs. 77c,d, 78b, 79b, 81a,b). -- In culicid larvae, the often poorly delimited outer sclerite (that nearest the distal margin of the siphon) of one of the anterolateral spiracular lobes of the spiracular apparatus. (Syn.: outer flap of latero-dorsal valve, Marshall 1938, 49.) See appendix entry SPIRACULAR LOBE.

apical lobes. -- See lobes.

apodeme. -- See SPIRACULAR APODEME.

appendage. -- See NUTTALL AND SHIPLEY'S ORGAN.

arc. -- See U-SHAPED BAND.

arched plate. -- See PECTEN PLATE.

auricles. -- See SIPHON ACUS.

axial rod. -- See SPIRACULAR APODEME.

balancing bristles. -- See DORSAL BRUSH.

band. -- See COMB PLATE.

bar. -- See PECTEN PLATE and U-SHAPED BAND.

bar of chitin. -- See U-SHAPED BAND.

barred area. -- See GRID.

basal apparatus. -- See GRID.

basal chitinous appendage (appendice chitineux basal). -- See SIPHON ACUS.

basal pedicel. -- See columella.

basal plaque. -- See SETAL SUPPORT PLATE.

basal plates. -- See COMB PLATE.

basal supporting plate. -- In anopheline larvae (Imms 1908, 131), a "chitinised sclerite" (Imms 1908, 107) located anteriorly at the base of the spiracular apparatus and extended laterally to the pecten plate on either side of the apparent eighth abdominal segment. (Syn.: chitinised sclerite, Imms 1908, 107; presiphonic fold, Christophers 1922, in part, 538; lateral siphonic area, Christophers 1922, in part, 538.)

basal tubercle. -- See SETAL SUPPORT PLATE.

base. -- See columella.

baso-siphonal projection. -- See SIPHON ACUS.

beard. -- See VENTRAL BRUSH.

bifid process. -- See NUTTALL AND SHIPLEY'S ORGAN.

blood gills. -- See ANAL PAPILLA.

BOSS (B). -- In certain culicid larvae, "a more or less strongly developed elevated area at the base of the ventral brush, usually more or less sclerotized but without grid" (Belkin 1962, 561). See GRID.

bosses. -- See dorsal valves.

breathing apparatus. -- See SPIRACULAR APPARATUS.

breathing horn. -- See SIPHON.

breathing siphon. -- See SIPHON.

breathing tube. -- See SIPHON.

bridge (Brücke). -- See LATERAL GRID BAR.

bristles. -- See PECTEN SPINE.

brush. -- See VENTRAL BRUSH.

butterfly scale-like organs (Schmetterlingsschuppen-artige Organe). -- See COMB SCALE.

caudal fan. -- See VENTRAL BRUSH.

caudal fins. -- See ANAL PAPILLA.

caudal hairs. -- See DORSAL BRUSH.

caudal setae. -- See DORSAL BRUSH.

central flap valve (clapet central). -- See ANTERIOR SPIRACULAR LOBE.

central plate (Zentralplatte). -- See MEDIAN PLATE.

checkered plate. -- See MEDIAN PLATE.

chequered plate. -- See MEDIAN PLATE.

chitinised sclerite. -- See basal supporting plate.

chitinized plate. -- See SADDLE and STERNAL PLATE.

chitinized plates. -- See TERGAL PLATE.

chitinous arch. -- See PECTEN PLATE and U-SHAPED BAND.

chitinous bar. -- See GRID.

chitinous base. -- See GRID and SETAL SUPPORT PLATE.

chitinous blade (Chitinblad). -- See SPIRACULAR APODEME.

chitinous bridges (Chitinbrücken). -- See LATERAL GRID BAR.

chitinous cord. -- See RUDIMENTARY SPIRACLE.

chitinous funnel (entonnoir chitineux). -- See SPIRACULAR APODEME.

chitinous hook. -- See SETAL SUPPORT PLATE SPINE.

chitinous peg. -- See MEDIAN PALTE.

chitinous peg (Chitinzapfen). -- See SPIRACULAR APODEME.

chitinous plate. -- See GRID and SADDLE.

chitinous ridge (Chitinleiste). -- See GRID.

chitinous rod. -- See SPIRACULAR APODEME.

chitinous saddle (Chitinsattel). -- See SADDLE.

chitinous schield (Chitinschild). -- See SADDLE.

chitinous skeleton. -- See PECTEN PLATE and U-SHAPED BAND.

chitinous teeth (Chitintaender). -- See COMB SCALE.

chitin rod. -- See SPIRACULAR APODEME.

chitin staff. -- See SPIRACULAR APODEME.

circular dots. -- See MEDIAN ACCESSORY TERGAL PLATE.

circular spots. -- See MEDIAN ACCESSORY TERGAL PLATE.

clinging bristles. -- See DORSAL BRUSH.

closing lobes of the sipho. -- See SPIRACULAR LOBE.

closing valves (Vorschlussklappen). -- See SPIRACULAR LOBE.

collar. -- See SADDLE.

columella. -- In anopheline larvae (Iyengar 1928, 282), the basal stalk of Nuttall and Shipley's organ supporting the more membranous bilobed part. (Syn.: basal pedicel, Iyengar 1921, 216; pedicel, Iyengar 1921, 216; base, Puri 1931, 29; 'cup' part, Chang and Richart 1951, at least in part, 290.

COMB (C) (Figs. 78c, 80c). -- In most culicine and first stage anopheline larvae, a row or patch of cuticular projections centered on each side of the apparent eighth abdominal segment; sometimes arising from a sclerite, the comb plate. (Syn.: setae of the penultimate abdominal segment, Raschke 1887, 29; lateral comb, Dyar 1901a, 178; side combs, Dyar 1901a, 179; patch, Smith 1903, 311; double comb (Doppelkamm), Tänzer 1921, in part in anophelines, 139; strigose comb (Striegelkamm), Tänzer 1921, 143; comb (Striegel), Tänzer 1921, 157; secondary comb, Baisas 1947, in first stage anopheline larvae, 204; scales, Abdel-Malek 1949, 22.) Meinert (1886, 377) described the 2 combs as "rows of spines" and Patton and Cragg (1913, 201) simply referred to each comb as a "row of spines." Smith (1904) labelled the comb in his Figure 2 as a "patch of scales, combs or pectens." He variously referred to the comb as a "scale patch" (p. 20), "scale-patch" (p. 21), "scale band" (p. 196), and "lateral patches" (p. 221). See appendix.

COMB PLATE (CP). -- In certain culicine larvae (Belkin 1962, defined, 560), a lateral sclerite on abdominal segment VIII which bears the comb scales; sometimes the comb plates of opposite sides are joined dorsally; not homologous with the tergal plate of anopheline, *Orthopodomyia,* or *Corethrella* (Chaoborid) larvae; also not homologous with the large setal support plate which commonly bears setae 2-5 VIII in toxorhynchitine larvae. (Syn.: basal plates, Dyar 1902, in key, 51; transverse plate, Dyar 1903, 26; band, Smith 1904, 185; plate, Felt 1905, 444; sclerite, Gutsevich *et al.* 1974, 32.)

combs. -- See COMB SCALE.

COMB SCALE (CS) (Figs. 78c, 80c). -- In most culicine (Felt 1904, 264) and first stage anopheline larvae, one of the cuticular projections forming the comb; of variable form but usually scale- or spinelike; often bearing a fringe of small spines or denticles. (Syn.: butterfly scale-like organs (Schmetterlingsschuppenartige Organe), Haller 1878, 94; chitinous teeth (Chitintaender), Meinert 1886,

377; spines, Meinert 1886, 377; setae, Raschke 1887, 5; teeth, Dyar 1901a, 178; comb teeth, Dyar 1903, 27; scales, Smith 1903, 311; combs, Smith 1904, in Fig. 2, 19; pectens, Smith 1904, in Fig. 2, 19; strigose setae (Striegelborsten), Tänzer 1921, 143; comb spines (Striegeldornen), Stadtmann-Averfeld 1923, 111; comb teeth (Striegelzähne), Martini 1923, 547; lateral comb spines, Patton 1931, 144; comb-scales, Marshall 1938, 50; secondary comb teeth, Baisas 1947, in anophelines, 206; lateral comb scale, Abdel-Malek 1949, 21). See appendix.

comb-scales. -- See COMB SCALE.

comb spines (Striegeldornen). -- See COMB SCALE.

comb (Striegel). -- See COMB.

comb teeth. -- See COMB SCALE.

comb teeth (Kammzinken). -- See PECTEN SPINE.

comb teeth (Striegelzähne). -- See COMB SCALE.

conical papilla. -- See ANTEROLATERAL SPIRACULAR LOBE.

contractile appendage. -- See NUTTALL AND SHIPLEY'S ORGAN.

contractile thoracic appendage. -- See NUTTALL AND SHIPLEY'S ORGAN.

cratal hairs of ventral brush. -- See CRATAL SETA and VENTRAL BRUSH.

CRATAL SETA. -- See Part VIII (Knight and Laffoon 1971b, 161). (Syn.: cratal tufts, Marshall 1938, 49; cratal hairs of ventral brush, Woodhill and Pasfield 1941, 202.)

cratal tufts. -- See CRATAL SETA and VENTRAL BRUSH.

'cup' part. -- See columella.

cuticular expansion. -- See cuticular wing.

cuticular wing. -- In anopheline larvae (Iyengar 1928, 282), the expanded more membranous portion of each lobe of Nuttall and Shipley's organ. (Syn.: lamellar expansion, Iyengar 1921, 216; cuticular expansion, Iyengar 1921, 216; membranous part, Chang and Richart 1951, 288.)

denticles. -- See MARGINAL SPICULES.

denticles (Zahnchen). -- See PECTEN SPINE.

detached hairs of ventral brush. -- See PRECRATAL SETA and VENTRAL BRUSH.

domed area. -- See ANTERIOR MEDIAN PROCESS.

DORSAL BRUSH. -- See Part VIII (Knight and Laffoon 1971b, 161). (Syn.: anal setae (Analbørster), Meinert 1886, 377; dorsal tuft, Dyar 1901a, 179; dorsal

hairs, Nuttall and Shipley 1901, 74; tail setae (Schwanzborsten), Tänzer 1921, 145; swimming brushes, Wesenberg-Lund 1921, in part, 15; subdorsal hairs, Christophers 1922, in part, 543; tail hairs (Schwanzhaare), Stadtmann-Averfeld 1923, 114; end setae (Endborsten), Stadtmann-Averfeld 1923, 124; tail fan (Schwanzfächer), Stadtmann-Averfeld 1923, 127; balancing bristles, Patton and Evans 1929, 237; clinging bristles, Patton and Evans 1929, 237; anchoring bristles, Patton and Evans 1929, 244; dorsal fin, Tate 1932, 118; hooked hairs, Marshall 1942, 25; caudal setae, Hopkins 1952, 18; caudal hairs, Christophers 1960, 194.) See appendix.

dorsal chitinised saddle. -- See SADDLE.

dorsal chitinized plates. -- See TERGAL PLATE.

dorsal chitinous plate. -- See SADDLE.

dorsal fin. -- See DORSAL BRUSH.

dorsal hairs. -- See DORSAL BRUSH.

dorsal lateral pieces of outer tube. -- See POSTEROLATERAL SPIRACULAR LOBE PLATE II.

dorsal notched process. -- See NUTTALL AND SHIPLEY'S ORGAN.

dorsal plate. -- See SADDLE.

dorsal plates. -- See TERGAL PLATE.

dorsal saddle. -- See SADDLE.

dorsal saw (scie dorsale). -- See SAW.

dorsal sclerotized plates. -- See TERGAL PLATE.

dorsal spiracles. -- See POSTABDOMINAL SPIRACLE.

dorsal tergal plate. -- See SADDLE.

dorsal tuft. -- See DORSAL BRUSH.

dorsal valves. -- In Mansoniini larvae (Edwards 1919, 86), the tubercle bearing seta 2-S at the dorsal base of the spiracular apparatus. (Syn.: anterior valves, Edwards 1919, 86; bosses, Marshall 1938, 267.)

dorso-lateral hooks (crochets dorso-latéraux). -- See OUTER SPIRACULAR HOOKS.

dorsolateral lobe. -- See ANTEROLATERAL SPIRACULAR LOBE.

dorsolateral valve. -- See ANTEROLATERAL SPIRACULAR LOBE.

double comb (Doppelkamm). -- See COMB and PECTEN.

end setae (Endborsten). -- See DORSAL BRUSH.

fan. -- See VENTRAL BRUSH.

fan-like plate. -- See ANTERIOR SPIRACULAR LOBE PLATE I.

fan-shaped flap. -- See ANTERIOR SPIRACULAR LOBE.

fan-shaped piece. -- See ANTERIOR SPIRACULAR LOBE.

fan-shaped plate. -- See ANTERIOR SPIRACULAR LOBE and ANTERIOR SPIRACULAR LOBE PLATE I.

filamentous appendage. -- See ANTERIOR MEDIAN PROCESS.

filamentous projection. -- See ANTERIOR MEDIAN PROCESS.

fin. -- See VENTRAL BRUSH.

flabellum. -- See NUTTALL AND SHIPLEY'S ORGAN.

flap. -- See ANTEROLATERAL SPIRACULAR LOBE and NUTTALL AND SHIPLEY'S ORGAN.

flap-like body. -- See NUTTALL AND SHIPLEY'S ORGAN.

flaps. -- See ANAL PAPILLA.

flaps (Hudflige). -- See SPIRACULAR LOBE.

flap valves (clapets). -- See SPIRACULAR LOBE.

flat piece with saw-like dorsal keel. -- See SAW.

fold of skin. -- See ANTERIOR SPIRACULAR LOBE.

fringing hairs. -- See FRINGING SETAE.

FRINGING SETAE (FS). -- In *Chagasia* and dixid larvae, the setae bordering the outer margins of the posterolateral spiracular lobes; also bordering the anterolateral spiracular lobes in dixid larvae. (Syn.: marginal fringe, Johannsen 1903, in dixid larvae, 431; fringing hairs, Reid 1968, in *Chagasia* larvae, 46.)

gill filaments (Kiemenblätchen). -- See ANAL PAPILLA.

gill flaps. -- See ANAL PAPILLA.

gills. -- See ANAL PAPILLA.

gill-saddle index. -- See ANAL PAPILLA-SADDLE INDEX.

gill saddle index. -- See ANAL PAPILLA-SADDLE INDEX.

GRID (G) (Figs. 77b, 78c, 80c). -- In most culicid larvae (Marshall 1938, 49), a network of sclerotized ridges at the base of the ventral brush (specifically, bearing the cratal setae of the ventral brush); with transverse grid bars at

the base of individual setae; sometimes with lateral grid bars, these sometimes confluent with the ventroposterior margin of the saddle. (Syn.: scalariform thickening (leistenartige Verdickung), Raschke 1887, 5; basal apparatus, Nuttal and Shipley 1901, 63; semicircular basal pieces, Theobald 1901, 33; barred area, Dyar 1903, 24; ridged area, Smith 1904, 21; chitinous base, Imms 1907, 294; chitinous plate, Howard *et al.* 1912, 94; oval cribriform plate, Christophers 1922, 543; ventral fan-plate, Christophers 1922, 543; chitinous ridge (Chitinleiste), Stadtmann-Averfeld 1923, 114; chitinous bar, van den Assem and Bonne-Wepster 1964, 25.) See BOSS.

hair of the chaetoid type (Härchen von dem chätoiden Typus). See SPIRACULAR FILAMENT.

hairs. -- See PECTEN SPINE.

hair 1-S placement index. -- See SETA 1-S PLACEMENT INDEX.

hair tufts. -- See VENTRAL BRUSH.

hollow horn. -- See SPIRACULAR APODEME.

hollow peg (Hohlzapfen). -- See SPIRACULAR APODEME.

hollow tooth of the closing apparatus. -- See SPIRACULAR APODEME.

hooked hairs. -- See DORSAL BRUSH.

hooks. -- See INNER SPIRACULAR HOOKS and OUTER SPIRACULAR HOOKS.

horny tendon. -- See SPIRACULAR APODEME.

hump (Höcker). -- See ABDOMINAL SEGMENT X.

inner flap. -- In culicid larvae (Marshall 1938, 48), one of the inner sclerites (those nearest the spiracular openings) of the spiracular lobes of the spiracular apparatus; defined herein as anterior, anterolateral and posterolateral spiracular lobes plates I. (Syn.: inner plates, Christophers 1960, defined, 221.) See appendix entry SPIRACULAR LOBE.

inner flap of latero-dorsal valve. -- See ANTEROLATERAL SPIRACULAR LOBE PLATE I.

inner flap of medio-dorsal valve. -- See ANTERIOR SPIRACULAR LOBE PLATE I.

inner flap of ventral valve. -- See POSTEROLATERAL SPIRACULAR LOBE PLATE I.

inner lobe. -- In anopheline larvae (Iyengar 1921, 217), the mesal lobe of the bilobed proximal part of Nuttall and Shipley's organ.

inner plates. -- See inner flap.

inner plates of lateral perispiracular lobes. -- See ANTEROLATERAL SPIRACULAR LOBE PLATE I.

INNER SPIRACULAR HOOKS (ISH) (Fig. 81c,d). -- In larval Mansoniini, a set of bilaterally paired hooklike cuticular structures at the distal end of posterolateral spiracular lobe plate I; retracted into the spiracular apparatus when not being used to anchor the structure in plant tissue. (Syn.: hooks, Ingram and Macfie 1917, in part, 138; teeth on inner tube, Wesenberg-Lund 1918, 303; teeth of lateral sclerites of inner tube, Marshall 1938, 266; large lateral hooks (gros crochets latéraux), Guille 1975, 259.)

inner tube. -- In larval Mansoniini (Wesenberg-Lund 1918, 306), the internal wall of the modified spiracular apparatus largely comprised of the anterior spiracular lobe ("saw"), spiracular processes, and posterolateral spiracular lobe plates I.

knob. -- See ANTERIOR MEDIAN PROCESS.

lamellar expansion. -- See culicular wing.

lancet-shaped plate. -- See POSTERIOR SPIRACULAR PLATE.

large flap valves (grands clapets). -- See POSTEROLATERAL SPIRACULAR LOBE.

large lateral hooks (gros crochets latéraux). -- See INNER SPIRACULAR HOOKS.

last abdominal segment. -- See ABDOMINAL SEGMENT X.

last segment. -- See ABDOMINAL SEGMENT X.

lateral band. -- See LATERAL PLATE.

lateral bar. -- See LATERAL GRID BAR.

lateral chitinised band of anal segment. -- See LATERAL PLATE.

lateral chitinous lamellae. -- See POSTEROLATERAL SPIRACULAR LOBE.

lateral comb. -- See COMB.

lateral comb scale. -- See COMB SCALE.

lateral comb spines. -- See COMB SCALE.

lateral flaps. -- See ANTEROLATERAL SPIRACULAR LOBE.

lateral flap valves (clapets latéraux). -- See ANTEROLATERAL SPIRACULAR LOBE.

LATERAL GRID BAR (LGB) (Fig. 78c). -- In some culicid larvae, one of the more or less strongly developed longitudinal sclerotizations forming the lateral margins of the grid which supports the ventral brush; sometimes confluent with the ventroposterior margin of the saddle. (Syn.: bridge (Brücke), Stadtmann-Averfeld 1923, 118; chitinous bridges (Chitinbrücken), Stadtmann-Averfeld 1923, 124; lateral bar, Belkin 1962, in Fig. 412.)

lateral lobe (seitliche Lappen). -- See ANTEROLATERAL SPIRACULAR LOBE.

lateral papilla. -- See ANTEROLATERAL SPIRACULAR LOBE.

lateral patches. -- See COMB.

lateral perispiracular lobe. -- See ANTEROLATERAL SPIRACULAR LOBE.

lateral pieces. -- See POSTEROLATERAL SPIRACULAR LOBE PLATE II and SPIRACULAR PROCESS.

lateral pieces of the inner tube. -- See SPIRACULAR PROCESS.

LATERAL PLATE (LP) (Fig. 80c). -- In *Orthopodomyia* larvae (Smith 1904, 259; Gutsevich *et al.* 1974, 135), a small transverse lateral sclerite located cephalad of the saddle and perhaps belonging to embryonic abdominal segment IX; the lateral plates of opposite sides may join to form an incomplete ring; not believed to be homologous with the saddle acus. (Syn.: lateral band, Tate 1932, 117; lateral chitinised band of anal segment, Tate 1932, 20; sclerotized band, Zavortink 1968, 7.)

lateral plate of scoop. -- See POSTEROLATERAL SPIRACULAR LOBE PLATE II.

lateral plates. -- See PECTEN PLATE and POSTEROLATERAL SPIRACULAR LOBE PLATE II.

lateral siphonic area. -- In anopheline larvae (Christophers 1922, 538), a convex area of the body wall located between the spiracular apparatus and the pecten plate on either side of the apparent eighth abdominal segment; continuous anteriorly with the "presiphonic fold;" partly homologous with the "basal supporting plate" of Imms (1908, 131). See basal supporting plate.

lateral spiracles. -- See RUDIMENTARY SPIRACLE.

lateral spiracular valve. -- See ANTEROLATERAL SPIRACULAR LOBE.

lateral tooth-like process. -- See SETAL SUPPORT PLATE SPINE.

lateral valve (seitliche Klappe). -- See ANTEROLATERAL SPIRACULAR LOBE.

lateral wall of scoop. -- See POSTEROLATERAL SPIRACULAR LOBE PLATE II.

latero-dorsal valves. -- See ANTEROLATERAL SPIRACULAR LOBE.

lever (Hebel). -- See SPIRACULAR APODEME.

lobes. -- See lobes and SPIRACULAR LOBE.

lobes. -- In anopheline larvae (Iyengar 1921, 216), the proximal bilobed part of Nuttall and Shipley's organ supported by the columella. (Syn. apical lobes, Iyengar 1928, 282.) See NUTTALL AND SHIPLEY'S ORGAN.

lower surface (base) of posterior lobe. -- See POSTEROLATERAL SPIRACULAR LOBE PLATE II.

main abdominal plate. -- See TERGAL PLATE.

main tergal plate. -- See TERGAL PLATE.

marginal fringe. -- See FRINGING SETAE.

MARGINAL SPICULES (MSp) (Fig. 79c). -- In certain larval culicids (Belkin 1962, defined, 561), the posteriorly projecting spinelike cuticular processes borne along the caudolateral margin of the saddle. (Syn.: posterior dorsal saddle spines, Woodhill and Pasfield 1941, 202; spines, Woodhill and Pasfield 1941, 203; spicules, Hopkins 1952, 20; denticles, Gutsevich *et al.* 1974, 37.)

MEDIAN ACCESSORY TERGAL PLATE (MATP) (Fig. 77b). -- In some anopheline larvae (Evans 1938, 28), a small dorsal sclerite located immediately posterior to the tergal plate on the midline of abdominal segments I-VII. (Syn.: circular dots, Smith 1904, 167; circular spots, Smith 1904, 171; posterior tergal plate, Puri 1931, 37; accessory plates, Gillies and De Meillon 1968, in part, 10.)

median anterior fan-shaped plate. -- See ANTERIOR SPIRACULAR LOBE.

median caudal filament. -- See POSTERIOR MEDIAN PROCESS.

MEDIAN DORSAL CAUDAL PROCESS (MDCP). -- In some culicid larvae (Belkin 1962, defined, 561), a small median dorsal process of the caudal margin of the saddle which extends to the base of the dorsal brush.

median dorsal lobe. -- See ANTERIOR SPIRACULAR LOBE.

median dorsal valve. -- See ANTERIOR SPIRACULAR LOBE.

median plate. -- See MEDIAN PLATE and SAW.

MEDIAN PLATE (MdP) (Fig. 77c). -- In anopheline larvae (Christophers 1922, 538), a large sclerite located centrally on the dorsal surface of the spiracular apparatus which receives the attachment of the muscles which close the latter; homologous with the spiracular apodeme, posterolateral spiracular lobe plates I, and the posterior median plate found in culicine and toxorhynchitine larvae. (Syn.: chequered plate, Nuttall and Shipley 1901, in part, 65; median posterior plate, Nuttall and Shipley 1901, in part, 65; checkered plate, Johannsen 1903, 409; median plate, Imms 1908, in part, 107; median transverse plate, Imms 1908, in part, 107; chitinous peg, Imms 1908, in part, 131; terminal plate of spiracular lobe [= median transverse plate], Imms 1908, in part, 131; median plate of scoop, Christophers 1933, 33; central plate, Montschadsky 1925, 88 (= Zentralplatte, 92). See appendix.

median plate of scoop. -- See MEDIAN PLATE.

median posterior plate. -- See MEDIAN PLATE.

median sclerotized plate. -- See STERNAL PLATE.

median transverse plate. -- See MEDIAN PLATE.

median valve. -- See ANTERIOR SPIRACULAR LOBE.

medio-dorsal valve. -- See ANTERIOR SPIRACULAR LOBE.

membranous part. -- See cuticular wing.

MESOTHORAX (M) (Figs. 77a, 78a, 79a, 80a,b). -- See Part III (Knight and Laffoon 1970, 135).

METATHORAX (T) (Figs. 77a, 78a, 79a, 80a,b). -- See Part III (Knight and Laffoon 1970, 136).

middle lobes (mittleren Lappen). -- See ANTEROLATERAL SPIRACULAR LOBE.

movable transverse plate. -- See ANTERIOR SPIRACULAR LOBE PLATE I.

ninth abdominal segment. -- See ABDOMINAL SEGMENT X.

ninth segment. -- See ABDOMINAL SEGMENT X.

NOTAL PLATE (NP) (Fig. 80a,b). -- In larvae of the *Anopheles minimus* species group (Reid 1968, 318 B. A. Harrison, pers. com.) and *Orthopodomyia* larvae (Zavortink 1968, 7), one of a number of small, usually paired sclerites occurring on the dorsal surface of the thorax; their occurrence, size, number, and location are variable. (Syn.: thoracic plates, Reid 1968, 318.) See appendix.

notched organ. -- See NUTTALL AND SHIPLEY'S ORGAN.

notched organ of Nuttall and Shipley. -- See NUTTALL AND SHIPLEY'S ORGAN.

notched process. -- See NUTTALL AND SHIPLEY'S ORGAN.

notched shoulder organ. -- See NUTTALL AND SHIPLEY'S ORGAN.

NUTTALL AND SHIPLEY"S ORGAN (NSG) (Fig. 77a, e). -- In anopheline larvae, a bilobed membranous structure borne dorsally on each side of the prothorax; holds the thorax to the water's surface during feeding; retracted into the thorax upon submersion. (Syn.: notched process, Nuttall and Shipley 1901, 60; flabellum, Nuttall and Shipley 1901, 74; flap, Nuttall and Shipley 1901, 74; bifid process, Theobald 1901, 32; flap-like body, Stephens and Christophers 1903, 233; dorsal notched process, Imms 1907, 317; thoracic appendage, Iyengar 1921, 216; contractile appendage, Iyengar 1921, 216; appendage, Iyengar 1921, 216; contractile thoracic appendage, Iyengar 1928, 281; thoracic supporting organ, Patton and Evans 1929, 241; thoracic clinging organ, Patton and Evans 1929, 241; accessory supporting organ, Patton 1931, 148; notched organ, Puri 1931, 29; notched organ of Nuttall and Shipley, Christophers 1933, 35; thoracic notched organs, Marshall 1938, 50; retractile organs, King and Bradley 1941, 63; retractile appendages, King and Bradley 1941, 63; prepupal respiratory trumpet, Chang and Richart 1951, 290; notched shoulder organ,Gutsevich *et al.* 1974, 28; shoulder organs, Gutsevich *et al.* 1974, 28.) See appendix.

openings of the stigmata. -- See SPIRACULAR OPENING.

orifice of the trachea (orifice de la trachée). -- See SPIRACULAR OPENING.

outer case. -- In larval Mansoniini (Ingram and Macfie 1917, 137), the external part of the spiracular apparatus, largely comprised of posterolateral spiracular lobe plates II. (Syn.: outer tube, Wesenberg-Lund 1918, 306.)

outer flap. -- In culicid larvae (Marshall 1938, 48), one of the outer sclerites (those nearest the distal margin of the siphon) of the spiracular lobes of the spiracular apparatus; defined herein as anterior, anterolateral and posterolateral spiracular lobe plates II. (Syn.: outer plates, Christophers 1960, defined, 221.) See appendix entry SPIRACULAR LOBE.

outer flap of latero-dorsal valve. -- See ANTEROLATERAL SPIRACULAR LOBE PLATE II.

outer flap of medio-dorsal valve. -- See ANTERIOR SPIRACULAR LOBE PLATE II.

outer flap of ventral valve. -- See POSTEROLATERAL SPIRACULAR LOBE PLATE II.

outer lobe. -- In anopheline larvae (Puri 1931, 32), the lateral lobe of the bilobed proximal part of Nuttall and Shipley's organ.

outer plate of anterior [perispiracular] lobe. -- See ANTERIOR SPIRACULAR LOBE PLATE II.

outer plates. -- See outer flap.

OUTER SPIRACULAR HOOKS (OSH) (Fig. 81c,d). -- In Mansoniini larvae, a group of 2-3 hook-like structures belonging to one of 2 bilaterally paired sets, an anterolateral and a posterolateral pair, borne on the somewhat membranous cuticle between the apex of posterolateral spiracular lobe plates II and the inner spiracular hooks; capable of being retracted into the apical lumen of the spiracular apparatus when not being used to anchor the structure in plant tissue. (Syn.: hooks, Ingram and Macfie 1917, in part, 138; teeth on the apex of outer tubes, Wesenburg-Lund 1918, 303; teeth of outer tube, Marshall 1938, 266; ventro-lateral hooks (crochets ventro-latéraux), Guille 1975, in part, 258; dorso-lateral hooks (crochets dorso-latéraux), Guille 1975, in part, 259.)

outer tube. -- See outer case.

oval cribriform plate. -- See GRID.

oval plates. -- See SUBMEDIAN ACCESSORY TERGAL PLATE.

paired accessory tergal plates. -- See SUBMEDIAN ACCESSORY TERGAL PLATE.

paired oval plates. -- See SUBMEDIAN ACCESSORY TERGAL PLATE.

papilla. -- See SETAL SUPPORT PLATE.

papillae. -- See ANAL PAPILLA.

patch. -- See COMB.

patch of scales, combs or pectens. -- See COMB.

pecten. -- See PECTEN SPINE.

PECTEN (P) (Figs. 77b,d, 78c). -- In culicine larvae, a comblike row of variously modified cuticular projections borne posterolaterally on the basal part of the siphon; in anopheline and dixid larvae, borne on the posterior margin of the pecten plate. (Syn.: setae of the siphon, Raschke 1887, 29; toothed lateral arches, Nuttall and Shipley 1901, in part, 65; toothed plates, Nuttall and Shipley 1901, in part, 65; row of teeth, Smith 1902a, 272; rows of spines, Smith 1903, 311; spines, Smith 1904, 19; row of spines, Smith 1904, 20; siphonal spines, Wesché 1910, 15; spines of the siphon, Wesché 1910, in explanation to plate 1; respiratory comb (Atemkamm), Tänzer 1921, 137; double comb (Doppelkamm), Tänzer 1921, in part in anophelines, 139; spinous comb (Dornkamm), Tänzer 1921, 142; tooth row (Zahnreihe), Stadtmann-Averfeld 1923, 124; toothed lateral plate, Puri 1931, in part, 38; spiracular pecten, Gater 1934, 20; primary comb, Baisas 1947, in anophelines, 204; siphonal pecten, van den Assem and Bonne-Wepster 1964, 25.) See appendix.

pecten plate. -- See U-SHAPED BAND.

PECTEN PLATE (PP) (Fig. 77b,d). -- In anopheline and dixid larvae, a more or less lateral sclerite bearing the pecten along its posterior margin; in some anopheline larvae, connected with its mate posteriorly via the U-shaped band; partly homologous with the siphon of other culicid larvae. (Syn.: ring, Nuttall and Shipley 1901, in part, 64; toothed lateral arches, Nuttall and Shipley 1901, in part, 65; toothed plates, Nuttall and Shipley 1901, in part, 65; chitinous skeleton, Nuttall and Shipley 1901, in part, 74; triangular plate, Smith 1904, 167; plate, Smith 1904, 171; chitinous arch, Patton and Cragg 1913, in part, 200; lateral plates, Howard *et al.* 1917, 969; arched plate, Patton 1931, 148; toothed lateral plate, Puri 1931, in part, 38; bar, Puri, 1931, 38; triangular sclerite, Marshall 1938, 50.) See appendix.

PECTEN ROW LENGTH INDEX. -- In siphon bearing culicid larvae, the distance from the base of the siphon, measured along the dorsal margin, to the most distal pecten tooth (Schick 1970, 15).

pectens. -- See COMB SCALE.

pecten scales. -- See PECTEN SPINE.

PECTEN SPINE (PS) (Figs. 77d, 78c). -- In culicid and dixid larvae, an individual element (cuticular process) of the pecten; of various forms but usually spinelike with a denticulate margin. (Syn.: denticles (Zähnchen), Haller 1878, 95; setae, Meinert 1886, 377 and Raschke 1887, 5; teeth, Nuttall and Shipley 1901, 64; spines, Smith 1902b, 299; pecten tooth, Dyar 1903, 27; pecten, Felt 1904, 264; scales, Macfie 1917, 301; comb teeth (Kammzinken), Tänzer 1921, in an anopheline, 140; spinous comb setae (Dornenkammborsten), Tänzer 1921, 149; thorns, Wesenberg-Lund 1921, 14; hairs, Wesenberg-Lund 1921, 14; pecten scales, Hearle 1929, 97; primary comb teeth, Baisas 1947, in anophelines, 206; bristles, Snodgrass 1959, 28.) See appendix.

pecten tooth. -- See PECTEN SPINE.

pedicel. -- See columella.

perispiracular lobe. -- See SPIRACULAR LOBE.

perispiracular valves. -- See SPIRACULAR LOBE.

peritremal structure. -- See SPIRACULAR APPARATUS.

plate. -- See COMB PLATE, PECTEN PLATE, SADDLE and SETAL SUPPORT PLATE.

plates. -- See TERGAL PLATE.

postabdominal respiratory siphon. -- See SIPHON.

POSTABDOMINAL SPIRACLE (PAS) (Fig. 81d). -- In culicid (Keilin 1944, 5) and other dipterous larvae, one of a pair of functional spiracles belonging to the true eighth abdominal segment. (Syn. for culicid larvae: spiracle(s) (Spirakler), Meinert 1886, 394; stigma, Hurst 1890a, 54; dorsal spiracles, Snodgrass 1959, 28; terminal spiracle, Christophers 1960, 218.)

postabdominal spiracular siphon. -- See SIPHON.

posterior dorsal saddle spines. -- See MARGINAL SPICULES.

posterior lobe. -- See POSTEROLATERAL SPIRACULAR LOBE.

POSTERIOR MEDIAN PLATE (PMP) (Figs. 78b, 79b, 81a). -- In culicine and toxorhynchitine larvae, a small sclerite located between posterolateral spiracular lobe plates I immediately posterior to the spiracular apodeme; in anopheline larvae, apparently retained as part of the median plate of the spiracular apparatus. (Syn.: posterior process, Montschadsky 1925, 84 (= hintere Fortsatz); posterior median process, Christophers 1960, in part, 218, defined, 221.)

posterior median process. -- See POSTERIOR MEDIAN PLATE and POSTERIOR MEDIAN PROCESS.

POSTERIOR MEDIAN PROCESS (PMc) (Fig. 81b). -- In certain culicine larvae (Christophers 1960, defined, 221), a filamentous projection arising from the posterior margin of the spiracular apodeme (forming part of a common spiracular opening in such cases) and protruding caudad between the posterolateral spiracular lobes of the spiracular apparatus. (Syn.: median caudal filament, Belkin 1962, defined, 561.)

posterior perispiracular lobe. -- See POSTEROLATERAL SPIRACULAR LOBE.

posterior pieces. -- See POSTEROLATERAL SPIRACULAR LOBE.

posterior plate. -- See POSTEROLATERAL SPIRACULAR LOBE PLATE II.

posterior process (hintere Fortsatz). -- See POSTERIOR MEDIAN PLATE.

POSTERIOR SPIRACULAR PLATE (PSP) (Fig. 81c,d). -- In Mansoniini larvae, the sclerotized platelike structure closing in the posterior margin of the spiracular apparatus between the posterolateral spiracular lobes; apparently developed from the membrane connecting the lobes; washboardlike in *Mansonia* larvae. (Syn.: ventral membrane, Ingram and Macfie 1917, 137; ventral piece of outer tube, Wesenberg-Lund 1918, 303; lancet-shaped plate, Wesenberg-Lund 1918, 306.) See appendix.

posterior tergal plate. -- See MEDIAN ACCESSORY TERGAL PLATE.

posterior valves. -- See POSTEROLATERAL SPIRACULAR LOBE.

posterior valves (hinteren Klappen). -- See POSTEROLATERAL SPIRACULAR LOBE.

POSTEROLATERAL SPIRACULAR LOBE (PSL) (Figs. 77c,d, 78b, 79b, 81a,b,c). -- In culicid larvae, one of the more posterior (larger pair) of 2 bilateral pairs of flaplike projections of the spiracular apparatus; highly developed in larvae of the tribe Mansoniini. (Syn.: posterior lobe, Johannsen 1903, 409; posterior pieces, Howard *et al.* 1912, 92; lateral chitinous lamellae, Ingram and Macfie 1917, in *Mansonia* larva, 137; ventral pair of valves, Edwards 1919, in *Mansonia* larva, 85; ventral valves, Edwards 1919, in *Mansonia* larva, 85; posterior valves, Edwards 1919, in *Mansonia* larva, 86; scoop [= the pair of lobes in anophelines], Christophers 1922, 538; posterior valves (hinteren Klappen), Martini 1923, 530; large flap valves (grands clapets), Sautet and Audibert 1946, 45; posterior perispiracular lobe, Christophers 1960, 218; ventrolateral valve, Belkin 1962, defined, 561; ventrolateral lobe, Belkin 1962, defined, 561; postero-lateral spiracular valve, Knight and Laffoon 1971b, 168; posterolateral spiracular valve, Knight and Laffoon 1971b, 169.) See appendix entry SPIRACULAR LOBE.

POSTEROLATERAL SPIRACULAR LOBE PLATE I (PSLP') (Figs. 78b, 79b, 81a,b,d). -- In culicine and toxorhynchitine larvae, the inner sclerite (that nearest the spiracular openings) of one of the posterolateral spiracular lobes of the spiracular apparatus; apparently retained as part of the median plate in anopheline larvae. (Syn.: ventral pieces, Ingram and Macfie 1917, in *Mansonia* larva, 138; ventral piece of inner tube, Wesenberg-Lund 1918, in *Mansonia* larva, 303; inner flap of ventral valve, Marshall 1938, 49.) See appendix entry SPIRACULAR LOBE.

POSTEROLATERAL SPIRACULAR LOBE PLATE II (PSLP") (Figs. 77c,d, 78b, 79b, 81a,b). -- In culicid larvae, the often poorly delimited outer sclerite (that nearest the distal margin of the siphon) of one of the posterolateral spiracular lobes of the spiracular apparatus. (Syn.: lateral plates, Imms 1908, 107; ventral lateral pieces of outer tube, Wesenberg-Lund 1918, in part in *Mansonia* larva, 303; dorsal lateral pieces of outer tube, Wesenberg-Lund 1918, in part in *Mansonia* larva, 303; lateral pieces, Wesenberg-Lund 1918, in *Mansonia* larva, 309; lateral plate of scoop, Christophers 1933, 33; lateral wall of scoop, Gater 1934, 24; ventral plate, Evans 1938, 30; outer flap of ventral valve, Marshall 1938, 49; posterior plate, Komp 1942, 18; lower surface (base) of posterior lobe, Getsevich *et al.* 1974, 34.) See appendix entry SPIRACULAR LOBE.

posterolateral spiracular valve. -- See POSTEROLATERAL SPIRACULAR LOBE.

postero-lateral spiracular valve. -- See POSTEROLATERAL SPIRACULAR LOBE.

pre-cratal hairs of ventral brush. -- See PRECRATAL SETA and VENTRAL BRUSH.

PRECRATAL SETA. -- See Part VIII (Knight and Laffoon 1971b, 162). (Syn.: pre-cratal tufts, Marshall 1938, 49; pre-cratal hairs of ventral brush, Woodhill and Pasfield 1941, 202; pre-cratal tuft, Woodhill and Pasfield 1941, 203; detached hairs of ventral brush, Belkin 1962, defined, 561.)

pre-cratal tuft. -- See PRECRATAL SETA and VENTRAL BRUSH.

precratal tufts. -- See PRECRATAL SETA and VENTRAL BRUSH.

prepupal respiratory trumpet. -- See NUTTALL AND SHIPLEY'S ORGAN.

presiphonic fold. -- In anopheline larvae (Christophers 1922, 538), a poorly delimited foldlike modification of the body wall located anteriorly at the base of the spiracular apparatus; believed to be partly homologous with the "basal supporting plate" of Imms (1908, 131). See basal supporting plate.

prespiracular plate. -- See ANTERIOR SPIRACULAR LOBE PLATE I.

pre-spiracular plate. -- See ANTERIOR SPIRACULAR LOBE PLATE I.

primary comb. -- See PECTEN.

primary comb teeth. -- See PECTEN SPINE.

processes. -- See ANAL PAPILLA.

process of spiracle. -- See SPIRACULAR PROCESS.

PROTHORAX (P) (Figs. 77a, 78a, 79a, 80a,b). -- See Part III (Knight and Laffoon 1970, 139).

RELATIVE SIPHON LENGTH. -- In culicid larvae with a siphon, the siphon length divided by the saddle length (Schick 1970, 15). See SADDLE LENGTH and SIPHON LENGTH.

respiratory apparatus. -- See SPIRACULAR APPARATUS.

respiratory comb (Atemkamm). -- See PECTEN.

respiratory cup. -- See respiratory fossa.

respiratory fossa. -- In anopheline larvae (Christophers 1922, 538), the depression conforming to the sunken or concave dorsal surface of the spiracular apparatus of the apparent eighth abdominal segment. (Syn.: respiratory recess, Nuttall and Shipley 1901, 65.) Corresponding to the "sunk space" (Miall 1895, 160) or "respiratory cup" (Patton and Cragg 1913, 190) of dixid larvae.

respiratory openings. -- See SPIRACULAR OPENING.

respiratory organ. -- See SPIRACULAR APPARATUS.

respiratory plate. -- See SPIRACULAR APPARATUS.

respiratory recess. -- See respiratory fossa.

respiratory siphon. -- See SIPHON.

respiratory syphon. - See SIPHON.

respiratory tube. -- See SIPHON.

respiratory tube (Atemtubus). -- See SIPHON.

respiratory valves (Atemklappen). -- See SPIRACULAR LOBE.

retractile appendages. -- See NUTTALL AND SHIPLEY'S ORGAN.

retractile organs. -- See NUTTALL AND SHIPLEY'S ORGAN.

rider (Reiter). -- See TRANSVERSE GRID BAR.

ridged area. -- See GRID.

ring. -- See PECTEN PLATE, SADDLE and U-SHAPED BAND.

root. -- See SETAL SUPPORT PLATE.

row of spines. -- See COMB and PECTEN.

row of teeth. -- See PECTEN.

rows of spines. -- See COMB and PECTEN.

rudder plate (Ruderplatte). -- See VENTRAL BRUSH.

rudder plate (Steuerplatte). -- See VENTRAL BRUSH.

rudder (Steuerruder). -- See VENTRAL BRUSH.

RUDIMENTARY SPIRACLE (rs) (Figs. 78a,c, 79a). -- In insects, a closed, nonfunctional spiracle. In culicid larvae, usually recognized as a tiny, well sclerotized rodlike thickening (representing the swollen and constricted walls of a spiracle to which is attached a thin strand or cord, a collapsed trachea) extending inward from the cuticle of the body wall; usually dorsolaterally located on the meso- and metathorax and abdominal segments I-VII. (Syn. for culicid larvae: chitinous cord, Hurst 1890a, in part, 54; vestigial spiracles, Dodge 1945, 163; lateral spiracles, Snodgrass 1959, 28; spiracular puncta, Christophers 1960, defined, 298; spiracular sensillum, Belkin 1962, defined, 560.) Rudimentary spiracles have also been termed "chitinous scars,"

"non-functional spiracles," and "stigmata" among others. See appendix.

SADDLE (Sa) (Figs. 77a, 78c, 80c). -- In culicid and some other nematocerous larvae, a large sclerite usually covering most of the dorsal and lateral surfaces of abdominal segment X; sometimes continuous ventrally to form a girdle. (Syn. for culicid larvae: chitinous schield (Chitinschild), Raschke 1887, 29; chitinous plate, Packard 1898, 465; plate, Dyar 1903, 24; dorsal plate, Dyar 1903, 24; chitinized plate, Johannsen 1903, 409; tergum, Imms 1908, 108; schield, Wesenberg-Lund 1921, 15; chitinous saddle (Chitinsattel), Stadtmann-Averfeld 1923, 114; 10th abdominal tergum, Patton and Evans 1929, 245; anal saddle, Hearle 1929, 97; dorsal chitinous plate, Patton 1931, 143; anterior tergal plate, Puri 1931, 39; dorsal saddle, Tate 1932, 118; dorsal chitinised saddle, Tate 1932, 118; tergal plate, Christophers 1933, 42; tergite X, Evans 1938, 31; tenth tergite, Evans 1938, 31; dorsal tergal plate, Komp 1942, 16; ring, Belkin 1962, defined, 561; collar, van den Assem and Bonne-Wepster 1964, 25.) See appendix.

SADDLE ACUS (SaA) (Fig. 78c). -- In some culicid larvae, a small sclerite often attached anterolaterally to the saddle. (Syn.: acus, Belkin 1962, defined, 561.) See appendix.

SADDLE LENGTH. -- In culicid larvae, the middorsal length of the saddle measured along a straight line parallel to the longitudinal axis of abdominal segment X.

SAW (SAW) (Fig. 81c,d). -- In Mansoniini larvae (Ingram and Macfie 1917, 138), the anterior toothed plate of the spiracular apparatus; at least partly homologous with the anterior spiracular lobe of other culicid larvae. (Syn.: median plate, Wesenberg-Lund 1918, 306; flat piece with saw-like dorsal keel, Edwards 1919, 85; dorsal saw (scie dorsale), Guille 1975, 258; siphonal saw (scie siphonique), Guille 1975, 271.)

scalariform thickening (leistenartige Verdickung). -- See GRID.

scale band. -- See COMB.

scale-patch. -- See COMB.

scale patch. -- See COMB.

scales. -- See COMB, COMB SCALE and PECTEN SPINE.

schield. -- See SADDLE.

sclerite. -- See COMB PLATE.

sclerotized band. -- See LATERAL PLATE and U-SHAPED BAND.

sclerotized plate. -- See SPIRACULAR APPARATUS and STERNAL PLATE.

scoop. -- See POSTEROLATERAL SPIRACULAR LOBE.

secondary comb. -- See COMB.

secondary comb teeth. -- See COMB SCALE.

semicircular basal pieces. -- See GRID.

setae. -- See COMB SCALE and PECTEN SPINE.

setae of the penultimate abdominal segment. -- See COMB.

setae of the siphon. -- See PECTEN.

SETAL SUPPORT PLATE (SSP) (Figs. 77a, 78a, 79a,b). -- In culicid larvae and other insects, one of the small sclerites from which arise one or more setae; these may or may not cover an elevation or tubercle. Note that a seta or setae may arise directly from a tubercle (or the body wall) without being supported by a thickened plate. In these cases the setae are said to arise from a tubercle rather than a setal support plate. (Syn.: basal plaque, Christophers 1960, 214; root, Reid 1968, 32.) Other common synonyms found in the literature include plate, tubercle, basal tubercle, chitinous base, and papilla.

SETAL SUPPORT PLATE SPINE (SSPS) (Figs. 77a, 78a, 79a,b). -- In culicid larvae, particularly on the thorax, an immovable multicellular process of a setal support plate; well developed on the thorax of *Aedes (Stegomyia)* larvae. (Syn.: ventral hooks, Macfie 1917, 300; ventral thoracic hooks, Macfie 1917, 300; chitinous hook, Patton and Evans 1929, 246; lateral tooth-like process, Patton 1931, 145; and commonly referred to as a "spine.")

SETA 1-S PLACEMENT INDEX. -- In siphon bearing culicid larvae, the distance from the dorsal base of the siphon to the alveolus of seta 1-S, measured along the same line of projection as the siphon length, divided by the siphon length. (Syn.: hair 1-S placement index, Schick 1970, 15.) See SIPHON LENGTH.

shoulder organs. -- See NUTTALL AND SHIPLEY'S ORGAN.

side combs. -- See COMB.

sipho. -- See SIPHON.

SIPHON (S) (Figs. 78b,c, 79b,c, 80c, 81c,d). -- In culicine (Sipho, Raschke 1887, 4), toxorhynchitine, and certain chaoborid larvae, the dorsally-located, elongate sclerotized tube (incompletely developed in early instars) of the apparent eighth abdominal segment; bearing the spiracular apparatus at its apex; structurally comprising parts of the definitive eighth and ninth abdominal segments; at least partially homologous with the pecten plate and U-shaped band of anopheline larvae. (Syn.: respiratory tube, see appendix under SIPHON; air-tube (Aanderød), Meinert 1886, 377; tube, Hurst 1890a, 50 and certain early taxonomists only; respiratory siphon, Hurst 1890b, 170; respiratory syphon, Giles 1900, 35; breathing horn, Giles 1900, 40; air tube, Dyar 1901a, 178; breathing tube, Theobald 1901, 29; anal siphon, Smith 1902b, 299; anal tube, Smith 1902b, 301; syphon tube, Stephens and Christophers 1903, 80; respiratory tube (Atemtubus), Stadtmann-Averfeld 1923, 116; siphonal tube (Siphonalrohr), Montschadsky 1927, 485; breathing siphon, Iyengar 1928, 294; siphon-tube, Barraud 1934, 5; postabdominal respiratory siphon, Keilin 1944, 34; postabdominal spiracular siphon,

Keilin 1944, in *Mansonia*, 37; air siphon, Abdel-Malek 1949, 22.) By their definitions, some of the synonyms listed here include the apically-borne spiracular apparatus. See appendix.

SIPHON ACUS (SA) (Fig. 78c). -- In come culicine larvae, a small sclerite often attached posterolaterally to the base of the siphon; in *Mansonia* larvae, sometimes forming a complete ring. (Syn.: acus, Barraud 1923b, 496; baso-siphonal projection, Woodhill and Pasfield 1941, 202; basal chitinous appendage (appendice chitineux basal), Sautet and Audibert 1946, 51; acus of siphon, van den Assem and Bonne-Wepster 1964, 24; auricles, Gutsevich *et al.* 1974, 32.) See appendix.

siphonal index. -- See SIPHON INDEX.

siphonal lever (Sipho-hebel). -- See SPIRACULAR APODEME.

siphonal lobes. -- See SPIRACULAR LOBE.

siphonal pecten. -- See PECTEN.

siphonal saw (scie siphonique). -- See SAW.

siphonal spines. -- See PECTEN.

siphonal tube (Siphonalrohr). -- See SIPHON.

siphonic index. -- See SIPHON INDEX.

SIPHON INDEX. -- In culicine and toxorhynchitine larvae, the ratio of the length of the siphon to its median width. See SIPHON LENGTH and SIPHON WIDTH. (Syn.: syphonic index number, Stephens and Christophers 1903, 81; siphonic index, Christophers 1906, 4; 'syphonic index', Patton and Cragg 1913, 201; siphonal index, Marshall, 1938, 48.) See appendix.

SIPHON LENGTH. -- In culicine and toxorhynchitine larvae, the dorsal length of the siphon measured in a straight line from base to apex.

siphon-tube. -- See SIPHON.

siphon valves (Siphoklappen). -- See SPIRACULAR LOBE.

SIPHON WIDTH. -- In culicine and toxorhynchitine larvae, the width at the mid-length of the siphon measured at a right angle to the longitudinal axis.

small flap valves (petit clapets). -- See ANTERIOR SPIRACULAR LOBE and ANTEROLATERAL SPIRACULAR LOBE.

small lateral flap valves (petit clapets latéraux). -- See ANTEROLATERAL SPIRACULAR LOBE.

small median flap valve (petit clapet médian). -- See ANTERIOR SPIRACULAR LOBE.

small rounded plates. -- See SUBMEDIAN ACCESSORY TERGAL PLATE.

spicules. -- See MARGINAL SPICULES.

spine. -- See SETAL SUPPORT PLATE SPINE.

spines. -- See COMB SCALE, MARGINAL SPICULES, PECTEN and PECTEN SPINE.

spines of the siphon. -- See PECTEN.

spinous comb (Dornkamm). -- See PECTEN.

spinous comb setae (Dornenkammborsten). -- See PECTEN SPINE.

SPIRACLE (S). -- In its simplest form, the aperture or opening into a trachea; in most insects, including the functional spiracles of culicid larvae, sunken below the surface of the integument thus comprising a chamber, the spiracular atrium (Snodgrass 1935, 439) or spiracular chamber (Keilin 1944, 5), and the external opening into this chamber, the spiracular opening. See the definition of SPIRACLE in Part III (Knight and Laffoon 1970, 140). See POSTABDOMINAL SPIRACLE and RUDIMENTARY SPIRACLE.

spiracle(s) (Spirakler). -- See POSTABDOMINAL SPIRACLE.

SPIRACULAR APODEME (SAd) (Figs. 78c, 79c, 80c, 81a,b,d). -- In culicine (Christophers 1960, 218) and toxorhynchitine larvae, the usually hollow funnel-shaped ingrowth of the dorsal surface of the spiracular apparatus located between but largely posterior to the postabdominal spiracles; receiving the muscles responsible for folding up the spiracular apparatus and hence closing the spiracles; partly homologous with the median plate found in anopheline larvae. (Syn.: chitinous blade (Chitinblad), Meinert 1886, 391; horny tendon, Meinert 1886, 490; chitinous peg (Chitinzapfen), Raschke 1887, 19; hollow peg (Hohlzapfen), Raschke 1887, 31; spur, Howard *et al.* 1912, 93; stirrup-shaped piece, Howard *et al.* 1912, 93; axial rod, Ingram and Macfie 1917, in *Mansonia* larva, 138; chitin rod, Wesenberg-Lund 1918, in *Mansonia* larva, 303; chitin staff, Wesenberg-Lund 1918, in *Mansonia* larva, 307; staff of chitin (bâtonnet de chitine), Guille 1975, in *Coquillettidia* larva, 259; hollow horn, Christophers 1922, 539; siphonal lever, Montschadsky 1925, 84 (= Sipho-hebel, 92); lever (Hebel), Montschadsky 1927, 485; chitinous rod, Patton 1931, 143; chitinous funnel (entonnoir chitineux), Sautet and Audibert 1946, 44; apodeme, Snodgrass 1959, 29; "stirrup", Gutsevich *et al.* 1974, including our "posterior median plate," 35.) Packard (1898, 465) referred to the spiracular apodeme as the "hollow tooth of the closing apparatus."

SPIRACULAR APPARATUS (SAp) (Figs. 77b,c,d, 78b,c, 79b,c, 80c, 81). -- In culicid (Christophers 1922, 537) and certain other dipterous larvae, a five-lobed valvular structure (including the spiracular apodeme or equivalent) encompassing the spiracles of the definitive eighth abdominal segment; structurally comprising parts of the embryonic eighth and ninth abdominal segments; borne at the apex of a siphon in culicine, toxorhynchitine, and certain other nematocerous larvae; highly modified in *Mansonia* and *Coquillettidia* larvae for piercing

plant tissues. (Syn. for culicid larvae: valvular apparatus, Hurst 1890b, 170; stigmatic apparatus, Nuttall and Shipley 1901, 62; respiratory apparatus, Nuttall and Shipley 1901, 64; respiratory organ, Nuttall and Shipley 1901, 65; stigmatic syphon, Stephens and Christophers 1903, in anophelines, 237; stigmatic plate, Imms 1907, 316; spiracular lobe, Imms 1908, 107; breathing apparatus, Wesché 1910, 15; spiracular plate (Stigmalpatte), Montschadsky 1927, 480; respiratory plate, Patton 1931, 147; sclerotized plate, King and Bradley 1941, 63; terminal respiratory apparatus (L'appareil terminal respiratoire), Sautet and Audibert 1946, 44; peritremal structure, Snodgrass 1959, 28; terminal apparatus, Snodgrass 1959, 29; spiracular peritreme, Clements 1963, 53; spiracular valve, Clements 1963, 53; stigmal plate, Gutsevich *et al.* 1974, 29.) See appendix.

spiracular chitinisation. -- See SPIRACULAR PROCESS.

SPIRACULAR FILAMENT (SF) (Fig. 81a). -- In some *Uranotaenia* larvae, a short or elongate filamentous process with an enlarged base borne externally on the posterolateral margin of each of the two postabdominal spiracles of the true eighth abdominal segment. (Syn.: hair of the chaetoid type (Härchen von dem chätoiden Typus), Montschadsky 1930, 581; tracheal filament, Peyton 1977, 4.) See appendix.

spiracular lobe. -- In anopheline larvae, as defined by Imms (1908, 107), the spiracular apparatus; as defined by Belkin (1962, 561), "the homolog of the siphon"* bearing the spiracles, spiracular apparatus, and pecten plate. See SPIRACULAR APPARATUS and SPIRACULAR LOBE.

SPIRACULAR LOBE (SL). -- In culicid larvae, one of the five rounded flaplike projections of the spiracular apparatus (highly modified in Mansoniini larvae). There are paired posterolateral and anterolateral spiracular lobes and an unpaired anterior spiracular lobe. (Syn.: tips (Zipfel), Haller 1878, 93; valve tips (Klappenzipfel), Haller 1878, 93; valves (Klapper), Meinert 1886, 391; flaps (Hudflige), Meinert 1886, 391; siphon valves (Siphoklappen), Raschke 1887, 28; siphonal lobes, Packard 1898, 465; closing lobes of the sipho, Packard 1898, 464; lobes, Giles 1900, 44; teeth, Dyar 1901b, 181; closing valves (Verschlussklappen), Tänzer 1921, 158; respiratory valves (Atemklappen), Martini 1923, 459; perispiracular valves, Marshall 1938, 48; flap valves (clapets), Sautet and Audibert 1946, 44; perispiracular lobe, Christophers 1960, 194.) In the works of Montschadsky (1925, 1927), and subsequent german and russian papers, the spiracular lobes of culicine larvae were termed valves ("Klappen") while those of anophelines were referred to as lobes ("Flügel," Montschadsky 1925 only; "Lappen."). See appendix.

SPIRACULAR OPENING (SOp) (Figs. 77c, 78b, 79b, 81a,b). -- In insects, the secondary orifice of a functional spiracle. Apparently first used to denote the

*Belkin's (1962, 561) definition of the siphon is vague but probably includes the external sclerotized tube (our siphon) and internal structures. Since he states that the "sclerotized part of the siphon [is] probably homologous with [the] pecten plate," and since by definition his "pecten plate" (p. 561) includes our U-shaped band, his "spiracular lobe" includes the pecten plate and U-shaped band defined herein.

secondary apertures of the postabdominal spiracles in culicid larvae by Howard *et al.* (1912, 91). (Syn. for culicid larvae: orifice of the trachea (orifice de la trachée), Meinert 1886, 490; respiratory openings, Theobald 1901, 33; openings of the stigmata, Patton and Cragg 1913, 200; air opening, Patton 1931, 143; spiraculum, van den Assem and Bonne-Wepster 1964, 27.)

spiracular pecten. -- See PECTEN.

spiracular peritreme. -- See SPIRACULAR APPARATUS.

spiracular plate (Stigmalplatte). -- See SPIRACULAR APPARATUS.

SPIRACULAR PROCESS (SPc) (Figs. 77c, 78b, 79b, 81a,b). -- In culicine (Montschadsky 1927, = Stigmenfortsatz, 486) and perhaps toxorhynchitine larvae, a median arm of the spiracular apodeme extending around the posterior margin of the spiracle (spiracular opening ?); in anopheline larvae (Montschadsky 1930, = Stigmalfortsatz, 547), a poorly or well developed crescentic sclerotization along the posterior margin of the spiracles; that in anophelines is not strictly homologous with its counterpart in the other culicid taxa. (Syn.: lateral pieces, Ingram and Macfie 1917, in *Mansonia* larva, 138; lateral pieces of the inner tube, Wesenberg-Lund 1918, in *Mansonia* larva, 303; spiracular chitinisation, Christophers 1933, in an anopheline, 35; process of spiracle, Gutsevich *et al.* 1974, in a culicine and an anopheline, 34; 35.)

spiracular puncta. -- See RUDIMENTARY SPIRACLE.

spiracular sensillum. -- See RUDIMENTARY SPIRACLE.

spiracular valve. -- See SPIRACULAR APPARATUS.

spiraculum. -- See SPIRACULAR OPENING.

spur. -- See SPIRACULAR APODEME.

staff of chitin (bâtonnet de chitine). -- See SPIRACULAR APODEME.

STERNAL PLATE (StP). -- In certain anopheline larvae, and larvae of the chaoborid genus *Corethrella* (Belkin 1962, 539), a small sclerite borne cephalad on the ventral margin of abdominal segment VIII. (Syn.: chitinized plate, Puri 1931, 119; median sclerotized plate, Reid 1968, 147; ventral sclerotized plate, Reid 1968, 152; sclerotized plate, Reid 1968, 161; ventral plate, Harrison and Scanlon 1975, 20.)

stigma. -- See POSTABDOMINAL SPIRACLE.

stigmal club. -- See ANTERIOR MEDIAN PROCESS.

stigmal filament. -- See ANTERIOR MEDIAN PROCESS.

stigmal plate. -- See SPIRACULAR APPARATUS.

stigmal process. -- See ANTERIOR MEDIAN PROCESS.

stigmatic apparatus. -- See SPIRACULAR APPARATUS.

stigmatic plate. -- See SPIRACULAR APPARATUS.

stigmatic syphon. -- See SPIRACULAR APPARATUS.

"stirrup". -- See SPIRACULAR APODEME.

stirrup-shaped piece. -- See SPIRACULAR APODEME.

strigose comb (Striegelkamm). -- See COMB.

strigose setae (Striegelborsten). -- See COMB SCALE.

subdorsal hairs. -- See DORSAL BRUSH.

SUBMEDIAN ACCESSORY TERGAL PLATE (SATP). -- In some anopheline larvae, one of usually a pair of small dorsal sclerites borne on either side of the midline immediately posterior to the median accessory tergal plates of abdominal segments I-VII. (Syn.: oval plates, Puri 1931, 38; paired oval plates, Christophers 1933, 44; small rounded plates, Gater 1934, 20; paired accessory tergal plates, Evans 1938, 28; accessory plates, Gillies and De Meillon 1968, in part, 10.)

sunk space. -- See respiratory fossa.

supporting plate. -- See ANTEROLATERAL SPIRACULAR LOBE PLATE I.

swimming brushes. -- See DORSAL BRUSH.

swimming fan (Svømmerifte). -- See VENTRAL BRUSH.

'syphonic index'. -- See SIPHON INDEX.

syphonic index number. -- See SIPHON INDEX.

syphon tube. -- See SIPHON.

tail-fan. -- See VENTRAL BRUSH.

tail-fan (Schwanzfächer). -- See DORSAL BRUSH.

tail-fin. -- See VENTRAL BRUSH.

tail hairs (Schwanzhaare). -- See DORSAL BRUSH.

tail rudder (Schwanzruder). -- See VENTRAL BRUSH.

tail segment (Schwanzsegment). -- See ABDOMINAL SEGMENT X.

tail setae (Schwanzborsten). -- See DORSAL BRUSH.

teeth. -- See COMB SCALE, PECTEN SPINE and SPIRACULAR LOBE.

teeth of lateral sclerites of inner tube. -- See INNER SPIRACULAR HOOKS.

teeth of outer tube. -- See OUTER SPIRACULAR HOOKS.

teeth on inner tube. -- See INNER SPIRACULAR HOOKS.

teeth on the apex of outer tubes. -- See OUTER SPIRACULAR HOOKS.

tenth tergite. -- See SADDLE.

tergal plate. -- See ANTERIOR SPIRACULAR LOBE PLATE I, SADDLE and TERGAL PLATE.

TERGAL PLATE (TP) (Figs. 77a,b, 80c). -- In anopheline larvae (Imms 1907, 317), a small sclerite occurring anteriorly on the dorsum of abdominal segments I-VIII; in *Orthopodomyia* and *Corethrella* (Chaoboridae) larvae, generally larger sclerites located on the dorsal surface of abdominal segments VI-VIII and VII-VIII, respectively; the tergal plates of *Orthopodomyia* may not be strictly homologous with those of anopheline and *Corethrella* larvae. (Syn. for anopheline larvae: tergum, Nuttall and Shipley 1901, 66; chitinized plates, Smith 1904, 167; dorsal plates, Smith 1904, 171; main tergal plate, Evans 1938, 28; abdominal plate, Gillies and De Meillon 1968, 10; main abdominal plate, Gillies and De Meillon 1968, 15. Syn. for *Orthopodomyia* larvae: abdominal plates, Howard *et al.* 1917, 878; dorsal plates, Howard *et al.* 1917, 879; plates, Tate 1932, 111; dorsal chitinized plates, Tate 1932, 117; dorsal sclerotized plates, Chapman 1964, 435.)

tergite X. -- See SADDLE.

tergum. -- See SADDLE and TERGAL PLATE.

terminal apparatus. -- See SPIRACULAR APPARATUS.

terminal flaps. -- See ANAL PAPILLA.

terminal plate of spiracular lobe. -- See MEDIAN PLATE.

terminal respiratory apparatus (L'appareil terminal respiratoire). -- See SPIRACULAR APPARATUS.

terminal segment (Endsegment). -- See ABDOMINAL SEGMENT X.

terminal spiracle. -- See POSTABDOMINAL SPIRACLE.

10th abdominal tergum. -- See SADDLE.

thoracic appendage. -- See NUTTALL AND SHIPLEY'S ORGAN.

thoracic clinging organ. -- See NUTTALL AND SHIPLEY'S ORGAN.

thoracic notched organs. -- See NUTTALL AND SHIPLEY'S ORGAN.

thoracic plates. -- See NOTAL PLATE.

thoracic supporting organ. -- See NUTTALL AND SHIPLEY'S ORGAN.

THORAX (Th). -- See Part III (Knight and Laffoon 1970, 141). See MESOTHORAX, METATHORAX and PROTHORAX.

thorns. -- See PECTEN SPINE.

10th segment. -- See ABDOMINAL SEGMENT X.

tips (Zipfel). -- See SPIRACULAR LOBE.

toothed lateral arches. -- See PECTEN and PECTEN PLATE.

toothed lateral plate. -- See PECTEN and PECTEN PLATE.

toothed plates. -- See PECTEN and PECTEN PLATE.

tooth row (Zahnreihe). -- See PECTEN.

tracheal filament. -- See SPIRACULAR FILAMENT.

tracheal gill bearing hump (Tracheenkiemen tragenden Höcker). -- See ABDOMINAL SEGMENT X.

tracheal gill hump (Tracheenkiemenhöcker). -- See ABDOMINAL SEGMENT X.

tracheal gills (Tracheenkiemen). -- See ANAL PAPILLA.

transparent knob. -- See ANTERIOR MEDIAN PROCESS.

transverse bar. -- See TRANSVERSE GRID BAR.

transverse chitinous band. -- See U-SHAPED BAND.

TRANSVERSE GRID BAR (TGB) (Fig. 78c). -- In many culicid larvae, one of the transverse sclerotizations supporting the bases of the individual setae of the ventral brush; the transverse grid bars are sometimes joined laterally by lateral grid bars. (Syn: rider (Reiter), Stadtmann-Averfeld 1923, 118; transverse bar, Belkin 1962, in Fig. 412.)

transverse movable pad. -- See ANTERIOR SPIRACULAR LOBE.

transverse plate. -- See ANTERIOR SPIRACULAR LOBE PLATE I and COMB PLATE.

triangular flaps. -- See ANTEROLATERAL SPIRACULAR LOBE.

triangular plate. -- See PECTEN PLATE.

triangular sclerite. -- See PECTEN PLATE.

tube. -- See SIPHON.

tubercle. -- See SETAL SUPPORT PLATE.

U-SHAPED BAND (UB) (Fig. 77d). -- In some anopheline larvae (Marshall 1938, 50), a sclerotized strip of cuticle located posteriorly at the base of the spiracular apparatus and connecting the pecten plates of opposite sides on the apparent eight abdominal segment; partly homologous with the siphon of other culicid larvae. (Syn.: ring, Nuttall and Shipley 1901, in part, 64; chitinous skeleton, Nuttall and Shipley 1901, in part, 74; transverse chitinous band, Imms 1908, 107; chitinous arch, Patton and Cragg 1913, in part, 200; bar, Patton 1931, 148; bar of chitin, Puri 1931, 39; sclerotized band, Komp 1942, 18; arc, Gutsevich *et al.* 1974, 23.) The "pecten plate" of Belkin (1962, defined, 561) includes the pair of pecten plates as well as the U-shaped band.

valves (Klapper). -- See SPIRACULAR LOBE.

valve tips (Klappenzipfel). -- See SPIRACULAR LOBE.

valvular apparatus. -- See SPIRACULAR APPARATUS.

ventral beard. -- See VENTRAL BRUSH.

VENTRAL BRUSH. -- See Part VIII (Knight and Laffoon 1971b, 170). (Syn.: swimming fan (Svømmevifte), Meinert 1886, 377; rudder (Steuerruder), Raschke 1887, 5; vertical fin, Miall 1895, 115; ventral fan, Nuttall and Shipley 1901, 64; ventral hairs, Nuttall and Shipley 1901, 74; tail-fan, Theobald 1901, 29; fan, Theobald 1901, 29; caudal fan, Theobald 1901, 31; brush, Dyar 1903, 24; anal tuft, Smith 1904, 19; hair tufts, Smith 1904, 21; ventral tuft, Felt 1905, 445; ventral beard, Wesché 1910, 15; tail rudder (Schwanzruder), Tänzer 1921, 147; vertical rudder (vertikalen Ruders), Tänzer 1921, 147; ventral swimming brush, Wesenberg-Lund 1921, 15; ventral hair fan, Christophers 1922, 543; anal fan, Barraud 1923a, 936; rudder plate (Ruderplatte), Stadtmann-Averfeld 1923, 114; rudder plate (Steuerplatte), Stadtmann-Averfeld 1923, 114; ventral fin, Patton and Evans 1929, 237; ventral caudal hairs, Gater 1934, 23; cratal tufts, Marshall 1938, in part, 49; precratal tufts, Marshall 1938, in part 49; fin, Marshall 1938, 51; pre-cratal hairs of ventral brush, Woodhill and Pasfield 1941, in part, 202; cratal hairs of ventral brush, Woodhill and Pasfield 1941, in part, 202, pre-cratal tuft, Woodhill and Pasfield 1941, in part, 203; anal fin, Deonier 1943, 385; beard, Hopkins 1952, 18; detached hairs of ventral brush, Belkin 1962, in part, 561; ventral caudal tuft, Reid 1968, 39.) Imms (1908, 108) used the term "'tail-fin'" in quotes indicating that he had borrowed it from an earlier source. See appendix.

ventral caudal hairs. -- See VENTRAL BRUSH.

ventral caudal tuft. -- See VENTRAL BRUSH.

ventral fan. -- See VENTRAL BRUSH.

ventral fan-plate. -- See GRID.

ventral fin. -- See VENTRAL BRUSH.

ventral hair fan. -- See VENTRAL BRUSH.

ventral hairs. -- See VENTRAL BRUSH.

ventral hooks. -- See SETAL SUPPORT PLATE SPINE.

ventral lateral pieces of outer tube. -- See POSTEROLATERAL SPIRACULAR LOBE PLATE II.

ventral membrane. -- See POSTERIOR SPIRACULAR PLATE.

ventral pair of valves. -- See POSTEROLATERAL SPIRACULAR LOBE.

ventral piece of inner tube. -- See POSTEROLATERAL SPIRACULAR LOBE PLATE I.

ventral piece of outer tube. -- See POSTERIOR SPIRACULAR PLATE.

ventral pieces. -- See POSTEROLATERAL SPIRACULAR LOBE PLATE I.

ventral plate. -- See POSTEROLATERAL SPIRACULAR LOBE PLATE II and STERNAL PLATE.

ventral sclerotized plate. -- See STERNAL PLATE.

ventral swimming brush. -- See VENTRAL BRUSH.

ventral thoracic hooks. -- See SETAL SUPPORT PLATE SPINE.

ventral tuft. -- See VENTRAL BRUSH.

ventral valves. -- See POSTEROLATERAL SPIRACULAR LOBE.

ventro-lateral hooks (crochets ventro-latéraux). -- See OUTER SPIRACULAR HOOKS.

ventrolateral lobe. -- See POSTEROLATERAL SPIRACULAR LOBE.

ventrolateral valve. -- See POSTEROLATERAL SPIRACULAR LOBE.

vertical fin. -- See VENTRAL BRUSH.

vertical rudder (vertikalen Ruders). -- See VENTRAL BRUSH.

vestigial spiracles. -- See RUDIMENTARY SPIRACLE.

Fig. 77a-d. *Anopheles (Anopheles) crucians* Wiedemann. Fourth stage larva.

a. Dorsal and ventral aspects of thorax and abdominal segments I-VI.
b. Lateral (left) aspect of abdominal segments VII, VIII and X.
c. Dorsal aspect of spiracular apparatus.
d. Lateral (left) aspect of pecten and pecten plate, and the spiracular apparatus.

Fig. 77e. *Anopheles (Celia) stephensi* Liston. Dorsal aspect of left Nuttall and Shipley's organ of fourth stage larva. (Drawn from SEM micrograph).

Abbreviations

I-VIII, X = abdominal segments
AMPc = anterior median process
APP = anal papilla
ASL = anterior spiracular lobe
ASLP' = anterior spiracular lobe plate I
ASLP" = anterior spiracular lobe plate II
ATP = accessory tergal plate
G = grid
LSL = anterolateral spiracular lobe
LSLP' = anterolateral spiracular lobe plate I
LSLP" = anterolateral spiracular lobe plate II
M = mesothorax
MATP = median accessory tergal plate
MdP = median plate
NSG = Nuttall and Shipley's organ
P = pecten; prothorax
PP = pecten plate
PS = pecten spine
PSL = posterolateral spiracular lobe
PSLP" = posterolateral spiracular lobe plate II
Sa = saddle
SAp = spiracular apparatus
SOp = spiracular opening
SPc = spiracular process
SSP = setal support plate
SSPS = setal support plate spine
T = metathorax
TP = tergal plate
UB = U-shaped band

Fig. 77

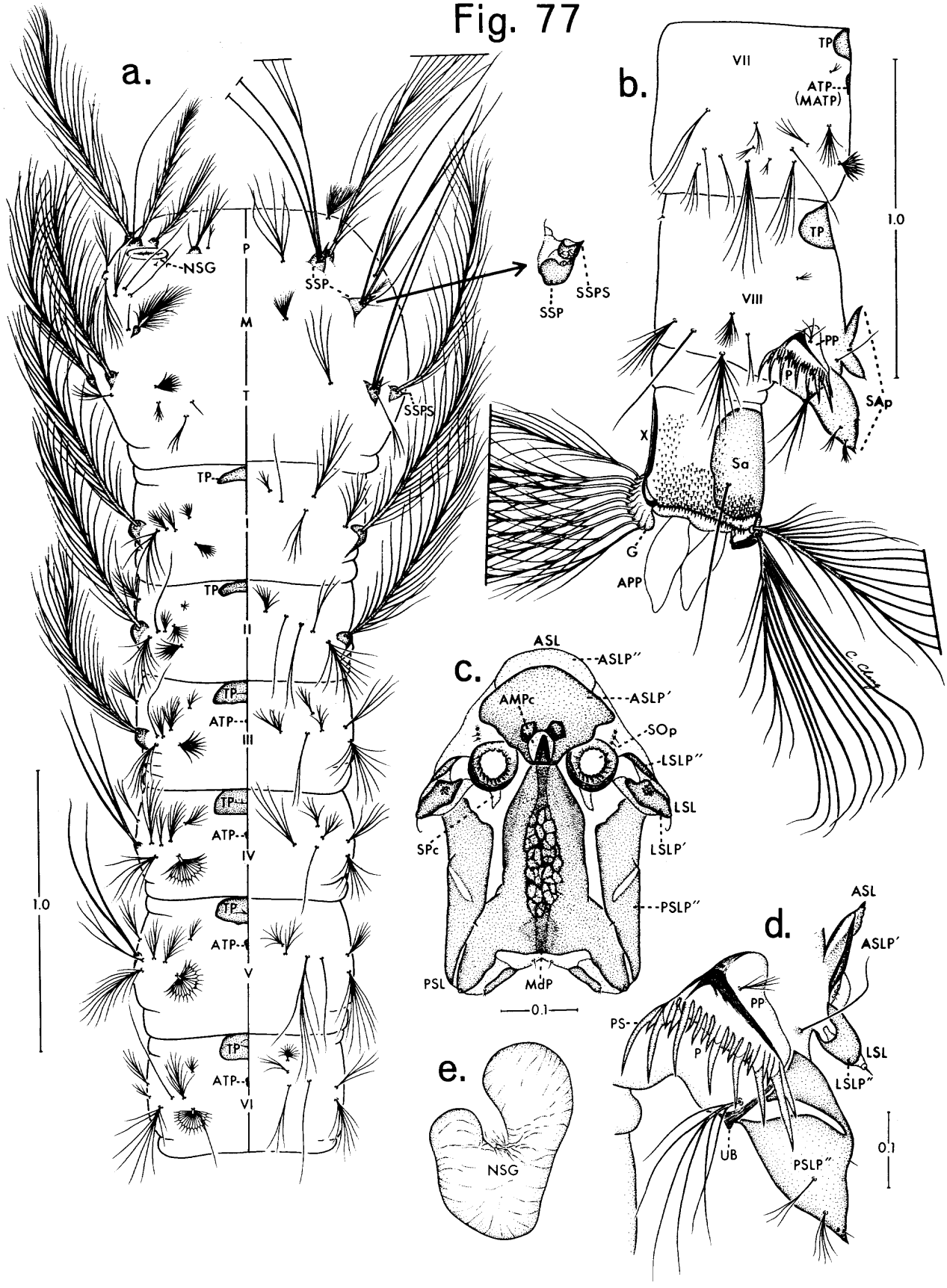

a.
NSG
SSP
SSPS
P
M
T
TP
ATP
I
II
III
IV
V
VI
1.0
b.
VII
VIII
TP
ATP
(MATP)
PP
P
SAp
X
Sa
G
APP
1.0
c.
ASL
ASLP″
ASLP′
AMPc
SOp
LSLP″
LSL
LSLP′
SPc
PSLP″
PSL
MdP
0.1
d.
ASL
ASLP′
PP
PS
P
LSL
LSLP″
UB
PSLP″
0.1
e.
NSG

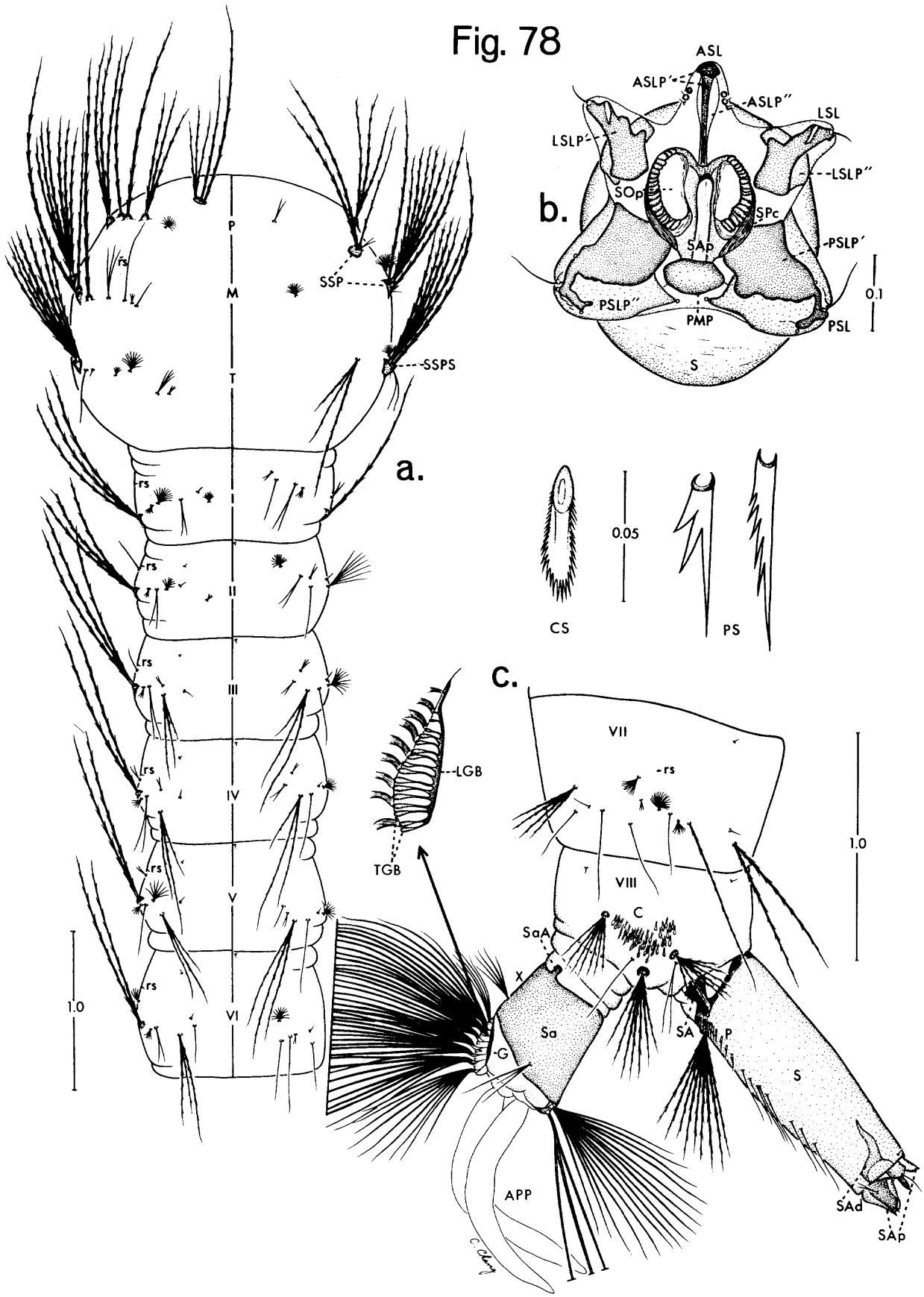
Fig. 78. *Culiseta (Culiseta) inornata* (Williston). Fourth stage larva.

a. Dorsal and ventral aspects of thorax and abdominal segments I-VI.
b. Dorsal aspect of spiracular apparatus.
c. Lateral (left) aspect of abdominal segments VII, VIII and X.

Abbreviations

I-VIII, X = abdominal segments
APP = anal papilla
ASL = anterior spiracular lobe
ASLP' = anterior spiracular lobe plate I
ASLP" = anterior spiracular lobe plate II
C = comb
CS = comb scale
G = grid
LGB = lateral grid bar
LSL = anterolateral spiracular lobe
LSLP' = anterolateral spiracular lobe plate I
LSLP" = anterolateral spiracular lobe plate II
M = mesothorax
P = pecten; prothorax
PMP = posterior median plate
PS = pecten spine
PSL = posterolateral spiracular lobe
PSLP' = posterolateral spiracular lobe plate I
PSLP" = posterolateral spiracular lobe plate II
rs = rudimentary spiracle
S = siphon
SA = siphon acus
Sa = saddle
SaA = saddle acus
SAd = spiracular apodeme
SAp = spiracular apparatus
SOp = spiracular opening
SPc = spiracular process
SSP = setal support plate
SSPS = setal support plate spine
T = metathorax
TGB = transverse grid bar

Fig. 78


a.
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b.
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ASLP''
LSL
LSLP'
LSLP''
SOp
SPc
SAp
PSLP'
PSLP''
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PSL
S
0.1
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CS
PS
c.
LGB
TGB
VII
VIII
C
SaA
X
Sa
G
SA
P
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APP
SAd
SAp
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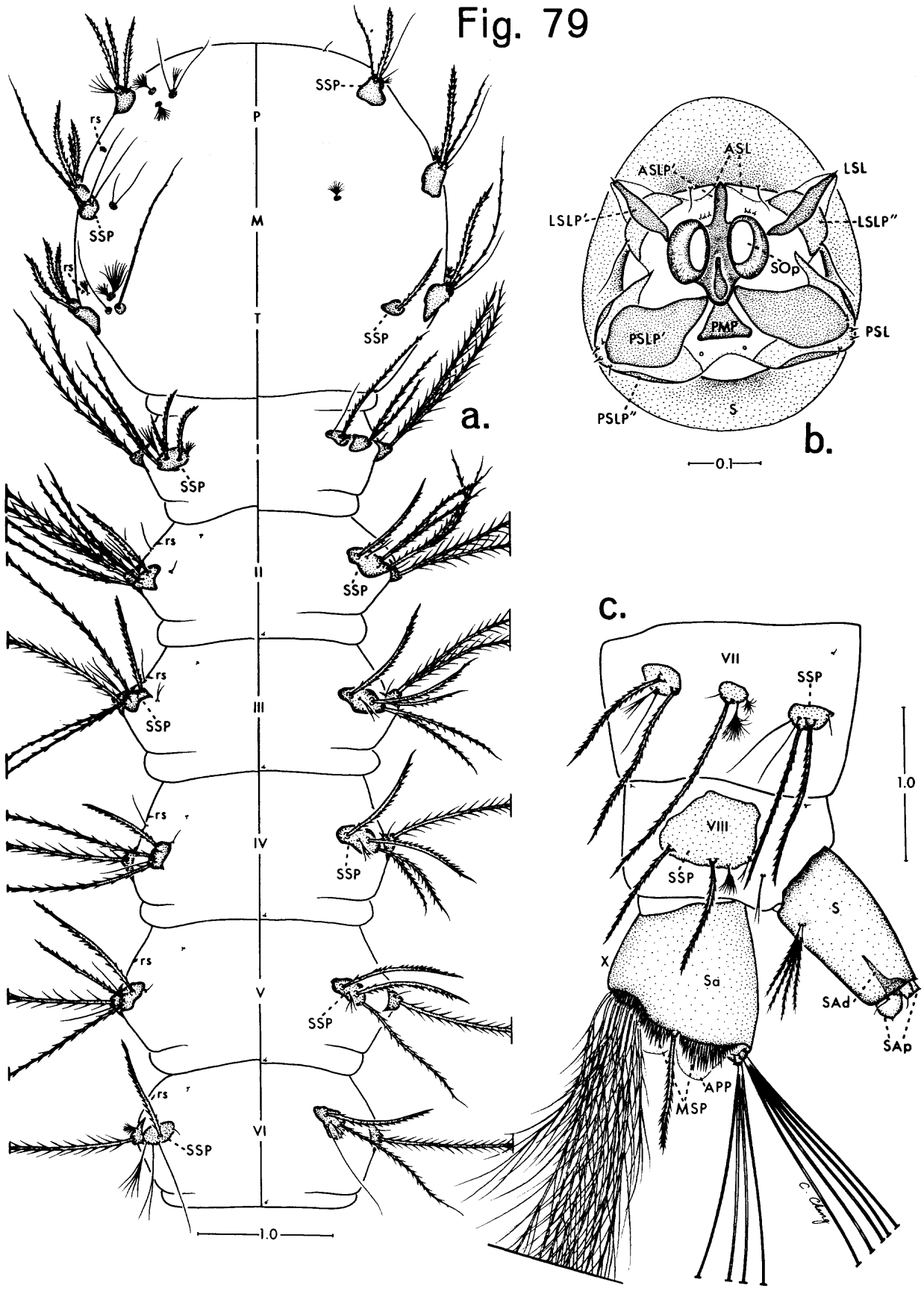
Fig. 79. *Toxorhynchites (Toxorhynchites) brevipalpis* Theobald. Fourth stage larva.

a. Dorsal and ventral aspects of thorax and abdominal segments I-VI.
b. Dorsal aspect of spiracular apparatus.
c. Lateral (left) aspect of abdominal segments VII, VIII and X.

Abbreviations

I-VIII, X	=	abdominal segments
APP	=	anal papilla
ASL	=	anterior spiracular lobe
ASLP'	=	anterior spiracular lobe plate I
LSL	=	anterolateral spiracular lobe
LSLP'	=	anterolateral spiracular lobe plate I
LSLP"	=	anterolateral spiracular lobe plate II
M	=	mesothorax
MSp	=	marginal spicules
PMP	=	posterior median plate
PSL	=	posterolateral spiracular lobe
PSLP'	=	posterolateral spiracular lobe plate I
PSLP"	=	posterolateral spiracular lobe plate II
rs	=	rudimentary spiracle
S	=	siphon
Sa	=	saddle
SAd	=	spiracular apodeme
SAp	=	spiracular apparatus
SOp	=	spiracular opening
SSP	=	setal support plate
T	=	metathorax

Fig. 79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PSL
PSLP"
S
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SAd
SAp
APP
MSP
1.0
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Fig. 80a. *Anopheles (Celia) pampanai* Buettiker and Beales. Dorsum of thorax of fourth stage larva.

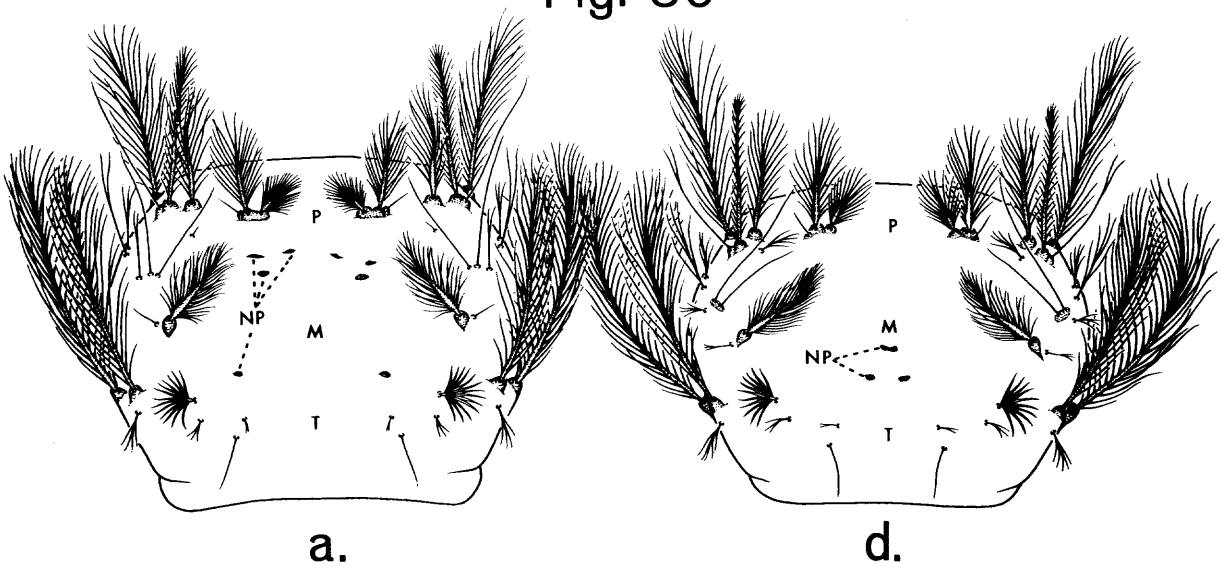
Fig. 80b. *Anopheles (Celia) minimus* Theobald. Dorsum of thorax of fourth stage larva.

Fig. 80c. *Orthopodomyia fascipes* (Coquillett). Fourth stage larva. Lateral (left) aspect of abdominal segments VII, VIII and X.

Abbreviations

VII, VIII, X = abdominal segments
APP = anal papilla
C = comb
CS = comb scale
G = grid
LP = lateral plate
M = mesothorax
NP = notal plate
P = prothorax
S = siphon
Sa = saddle
SAd = spiracular apodeme
SAp = spiracular apparatus
T = metathorax
TP = tergal plate

Fig. 80



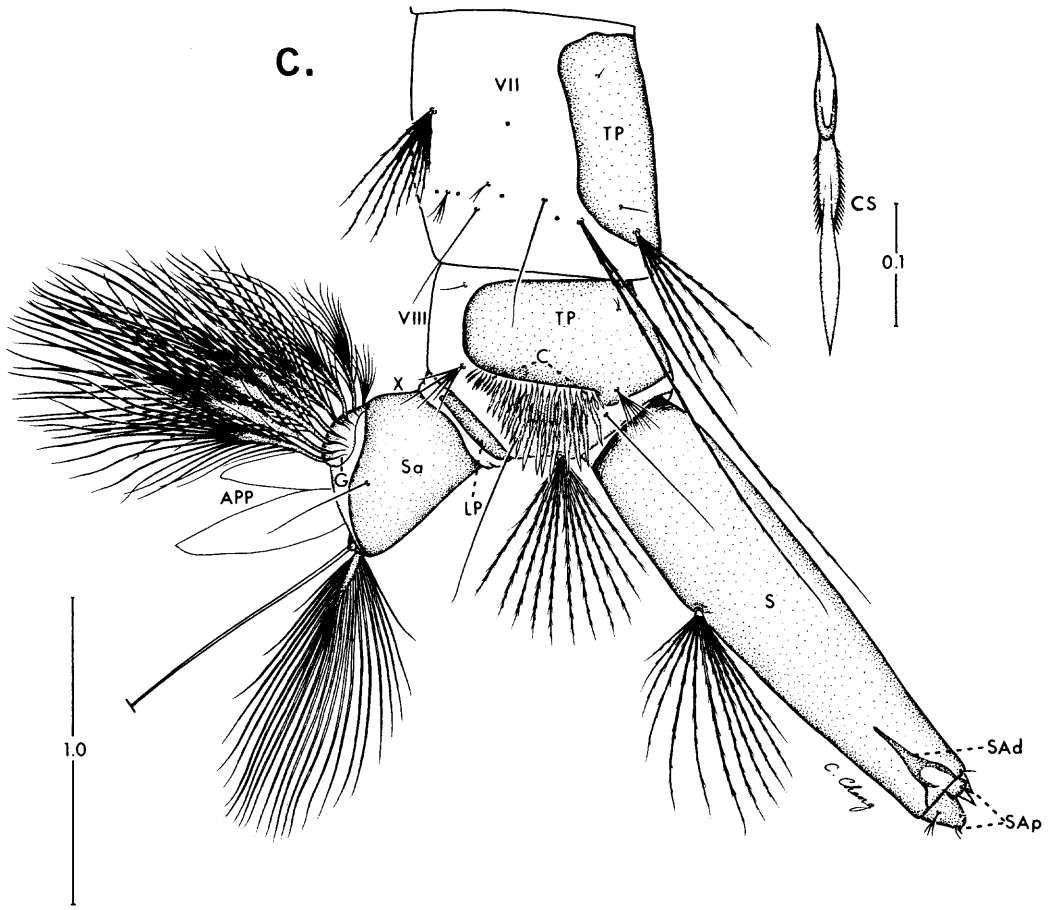


Fig. 81a. *Uranotaenia (Pseudoficalbia) unguiculata* Edwards. Dorsal aspect of spiracular apparatus of fourth stage larva. (Modified from Montschadsky 1930, fig. 12, pl. 8.)

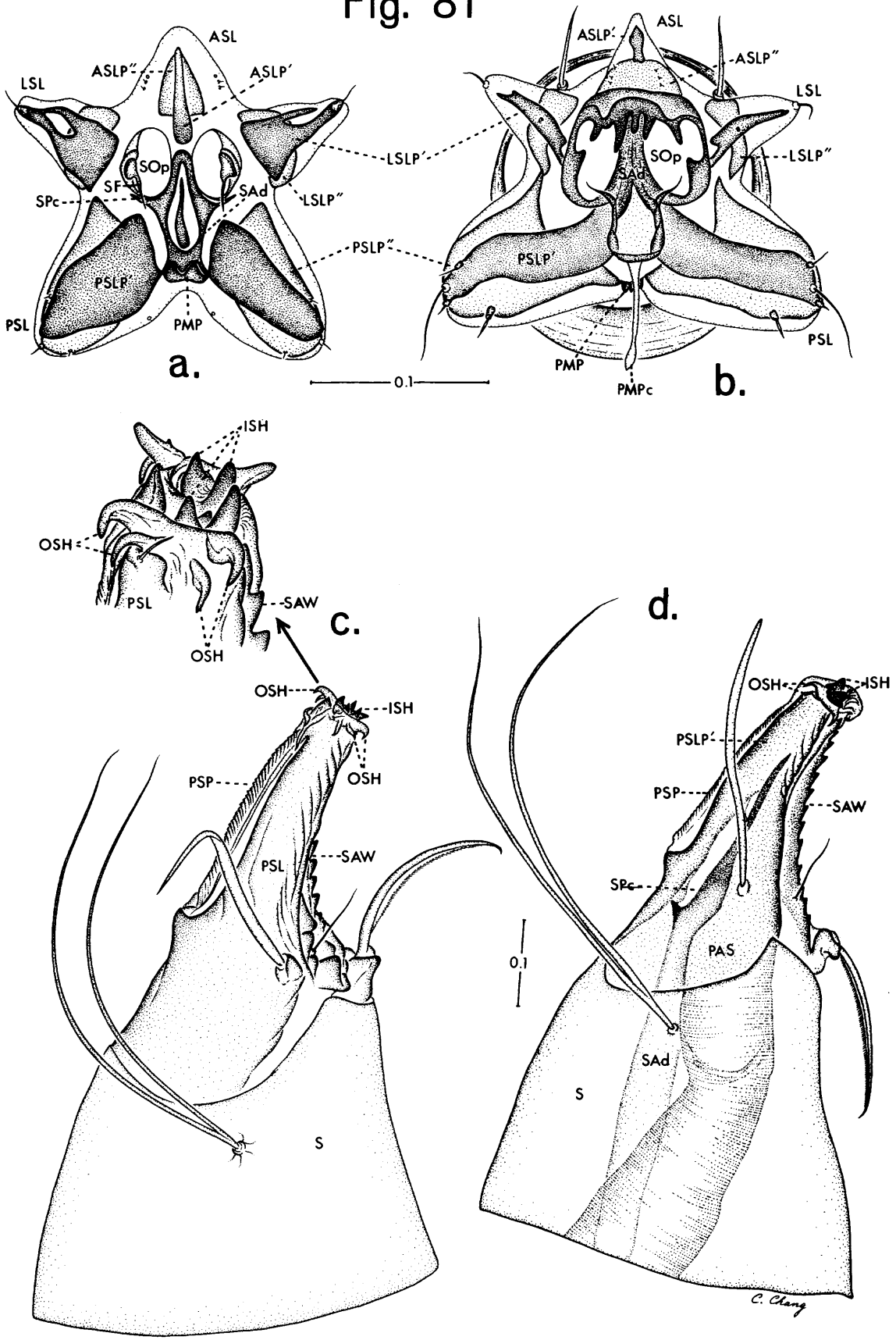
Fig. 81b. *Culex (Culex) nigripalpus* Theobald. Dorsal aspect of spiracular apparatus of fourth stage larva.

Fig. 81c, d. *Mansonia (Mansoniodes) uniformis* (Theobald). Lateral (right) aspects of siphon and spiracular apparatus of fourth stage larva. (a) External structure (drawn from SEM micrograph). (b) Internal structure.

Abbreviations

ASL = anterior spiracular lobe
ASLP' = anterior spiracular lobe plate I
ASLP" = anterior spiracular lobe plate II
ISH = inner spiracular hooks
LSL = anterolateral spiracular lobe
LSLP' = anterolateral spiracular lobe plate I
LSLP" = anterolateral spiracular lobe plate II
OSH = outer spiracular hooks
PAS = postabdominal spiracle
PMP = posterior median plate
PMPc = posterior median process
PSL = posterolateral spiracular lobe
PSLP' = posterolateral spiracular lobe plate I
PSLP" = posterolateral spiracular lobe plate II
PSP = posterior spiracular plate
S = siphon
SAd = spiracular apodeme
SAW = saw
SF = spiracular filament
SOp = spiracular opening
SPc = spiracular process

Fig. 81


ASL
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ASLP′
LSL
SOp
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a.
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PSLP′
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ISH
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APPENDIX

As previously, this part is appended for the purpose of explaining: 1) the introduction of new terms, 2) the recommendation of terms currently not widely accepted for use in the Culicidae, and 3) the derivation of terms where appropriate.

ANAL PAPILLA. -- Defined by Jardine (1913, 10) and Torre-Bueno (1937, 12) as four soft white protuberances, hence "papilla," surrounding the anus, hence the modifier "anal." Matsuda (1976) maintains that the structures are caenogenetically derived appendages (cerci) of the eleventh abdominal segment which are now borne on the tenth abdominal segment (the apparent ninth).

ANTERIOR MEDIAN PROCESS. -- Since this structure is similar in form to the more posterior structure denoted by Christophers (1960, 221) as the "posterior median process," we have derived this new term for the more anterior process. The modifier "stigmal" in the earlier terms applied to this structure is an unacceptable synonym for "spiracular."

ANTERIOR SPIRACULAR LOBE PLATE I. -- Christophers (1922, 538) referred to this sclerite as the "fan-shaped plate of Nuttall and Shipley." Nuttal and Shipley (1901), however, did not define this structure as a sclerite of the anterior spiracular lobe but rather intended to define it as the lobe itself as indicated by the following: (1) the structure was referred to as a "fan-shaped flap" and when the larva is "breathing freely the fan-shaped plate is bent forward so that its posterior face looks upwards..." (p. 65) and (2) the structure labelled in Fig. 15 is referred to as a "valve or flap" in the figure legend (p. 74). Since Christophers (1922, 538) clearly defined the structure as a "chitinous plate,"we credit him for the first use of the term as a synonym of the structure defined herein.

COMB. -- The first use of the term "comb" is somewhat uncertain. The "comb" was apparently first called the "lateral comb" and later shortened to "comb." We have found both terms used in H. G. Dyar's early publications. The term "lateral comb" occurs in his first paper (Dyar 1901a, 178) but "comb" does not appear for 2 more years (Dyar 1903, 23). We do not know the origin of "lateral comb" but we prefer to credit Dyar for shortening it to "comb."

COMB SCALE. -- Body vestiture is to be considered in a later part. Although the cuticular projections referred to herein as "comb scales" may not strictly meet our later definition for a scale, we endorse the term for standard use at this time.

DORSAL BRUSH. -- The origin and first use of this term is unknown to us but it was used as early as 1921 in a study on Danish culicids (Wesenberg-Lund 1921, 15).

MEDIAN PLATE. -- Imms (1908, 107) was the first to use the term "median plate" but not in the sense defined herein. Our "median plate," that of Christophers (1922, 538), includes the "chitinous peg," "median plate," and "median transverse plate" of Imms.

NOTAL PLATE. -- We have introduced this term as a replacement for the general descriptor "thoracic plates" employed by Reid (1968, 318) to designate the

sclerites of variable nature which occur on the dorsal surface of the thoracic segments. We have termed these sclerites "notal plates" in order to separate and distinguish them from the plates occurring on the dorsum of the abdomen which are commonly called "tergal plates," a term which is also applicable to the dorsal "thoracic plates."

NUTTALL AND SHIPLEY'S ORGAN. -- Since Nuttall and Shipley (1901, 60) were first to describe this structure, it seems appropriate to name it in their honor. The structure has been referred to as the "notched organ of Nuttall and Shipley" far too long and in our opinion the term "notched organ" is inadequate. Note that Nuttall and Shipley (1901, 60) referred to the structure as a "notched process" and not as a "notched organ" as one is led to believe.

PECTEN. -- The origin and first use of the term "pecten" is unknown to us. Dyar (1901a, 179) used the term in his first and subsequent publications. The "pecten" in anopheline larvae was believed to be homologous with the "comb" of culicines (note, however, that a "comb" occurs in first stage anopheline larvae) until the work of Christophers (1922).

PECTEN PLATE. -- The first definition of the "pecten plate" known to us is that of Belkin (1962, 561). Belkin's definition of the structure differs from our's in that his includes the pair of sclerites and the connecting "U-shaped band" defined herein.

PECTEN SPINE. -- The body vestiture will be dealt with in a later part, but as far as is known at this time, these structures meet our definition of a spine. The first mention of the term known to us occurs in a German paper treating the larval chaetotaxy (Martini 1923, 548 [= Pectendornen]).

POSTERIOR SPIRACULAR PLATE. -- We introduce this term so that the structure will have a name consistent with the terminology applied to other parts of the spiracular apparatus.

RUDIMENTARY SPIRACLE. -- The term "rudimentary spiracle" was used for culicid larvae as early as Felt (1905, 445).

SADDLE. -- The origin and first use of this term is unknown to us but it was employed for an anopheline larva as early as Johannsen (1903, 409). "Saddle" is morphologically an unacceptable term but due to its widespread use for the Culicidae we recommend it for standard use. Note that we have chosen to refer to the sclerite as a "saddle" whether it is borne saddlelike on abdominal segment X or forms a complete ring around it. We do not feel that there is a need to adopt another term for the latter case when this can simply be referred to as a complete "saddle."

SADDLE ACUS. -- We have added the modifier "saddle" to this term in order to indicate its association with the saddle and to distinguish it from the acus borne at the lateral base of the siphon.

SIPHON. -- Many of the synonyms listed for this term include not only the "siphon" as defined herein but also the spiracular apparatus. According to Jardine (1913, 204) the term is derived from the Greek word *siphon* meaning simply "a tube." Although it is not always parallel-sided as is a true cylinder, our "siphon" by definition includes only the open-ended, sclerotized tubular part encompassing an extension of the true eighth and ninth abdominal

segments which bears the postabdominal spiracles and their closing apparatus (spiracular apparatus) at its apex.

The first use of the synonymous term "respiratory tube" in the Culicidae is unknown to us but we have found it as early as Packard (1870, 368). Haller (1878, 95) used it in the German form, "Atemröhre."

SIPHON ACUS. -- We have added the modifier "siphon" to this term in order to indicate its association with the lateral base of the siphon and to distinguish it from the acus borne at the anterolateral margin of the saddle. Barraud (1923b, 496) first applied the term "acus" to this structure.

SIPHON INDEX. -- The first use of the term "siphon index" is unknown to us, but the ratio was apparently first devised as a taxonomic tool by Stephens and Christophers (1903, 81). They stated, "By dividing the length by the breadth a figure may be obtained which is useful, and may be termed the syphonic index number...". These authors did not define the length but referred to measuring the "greatest breadth of the syphon tube" in order to calculate the ratio.

SPIRACULAR APPARATUS. -- The germanized Latin word "Stigma" is the German equivalent of "spiracle." In the late 19th and early 20th centuries, many English speaking researchers adopted the anglicized Latin equivalent "Stigma" rather than the English "spiracle" when translating the German. The early English equivalent of our currently accepted "spiracular apparatus" therefore is "stigmatic apparatus," a term first applied to a culicid larva by Nuttall and Shipley (1901, 62).

SPIRACULAR FILAMENT. -- This structure is clearly a process of the wall of the spiracle and not of the trachea. We therefore introduce the term "spiracular filament" as a replacement for Peyton's (1977,4) term, "tracheal filament."

SPIRACULAR LOBE. -- We apply this term to each of the lobelike projections encompassing the postabdominal spiracles. We feel that the term "lobe" is more suitable than "valve" since the individual lobes do not function as valves.

According to position, the unpaired anterior lobe is termed the "anterior spiracular lobe," and the 2 bilateral pairs of lobes lying posterior to it are termed, from anterior to posterior, the "anterolateral" and the "posterolateral spiracular lobes." Each of these possesses an inner and an outer sclerite (the "inner" and "outer flaps" of Marshall 1938, 48). Instead of referring to the sclerites as "inner" and "outer plates" (Christophers 1960, 221), which are more acceptable than Marshall's terms, we have designated them as plates I and II, respectively, and named them according to the lobe to which they belong as follows:

Inner plates -- ANTERIOR SPIRACULAR LOBE PLATE I, ANTEROLATERAL SPIRACULAR LOBE PLATE I and POSTEROLATERAL SPIRACULAR LOBE PLATE I;
Outer plates -- ANTERIOR SPIRACULAR LOBE PLATE II, ANTEROLATERAL SPIRACULAR LOBE PLATE II and POSTEROLATERAL SPIRACULAR LOBE PLATE II.

Our terms are shorter than the Christophers equivalents, e.g., our "anterolateral spiracular lobe plate I" is shorter than "inner plates of the lateral perispiracular lobes" (Christophers 1960, 218).

VENTRAL BRUSH. -- The origin and first use of this term is unknown to us. Dyar used it in his first publication in 1901 (Dyar 1901a, 178).

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